

DC Innovation Strategy for Saint Elizabeths Final Report

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District of Columbia
Office of Planning



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Overview

The District of Columbia (DC) sits at the center of a robust regional innovation economy, with strengths in the national security, defense and intelligence industries. Spurred by the decision of the Federal government to consolidate the Department of Homeland Security (DHS) on the West Campus of Saint Elizabeths in Ward 8, the District identified a significant opportunity to capitalize on these strengths and redevelop the Saint Elizabeths East Campus in a strategic way that would promote innovation, diversify the District's economy and stimulate local economic development. Specifically, the District has identified the East Campus as an ideal location for an Innovation Hub that would harness the city's expanding technology sector and grow the entrepreneurial base and talent capacity in Ward 8 for the benefit of residents and local businesses. The Hub is defined by uses that support the full lifecycle of product innovation and business development, including education, training, business incubation, research and development, and private sector activities. There are three distinct goals for the Innovation Hub and Strategy:

- Build an environment (both programmatic and physical) that encourages the growth of entrepreneurial businesses in dynamic, innovation-driven industries in the District and facilitate partnering among public and private sectors in support of innovation and commercialization.
- Serve as a centerpiece for District-wide efforts to diversify the DC economy and enable DC-based businesses to increase their competitiveness in the private sector global market.
- Leverage assets and build capacity in underserved communities to ensure District residents and businesses participate in economic opportunities at Saint Elizabeths.

The Innovation Hub at Saint Elizabeths is envisioned as an integrated center of research, education, training, entrepreneurship, technology transfer, and private sector commercial activities. The hub supports neighborhood revitalization efforts and positions the District at the core of a regional innovation economy by leveraging the presence of homeland security, defense and intelligence agencies, and the network of contractors and innovators that engage with these agencies.

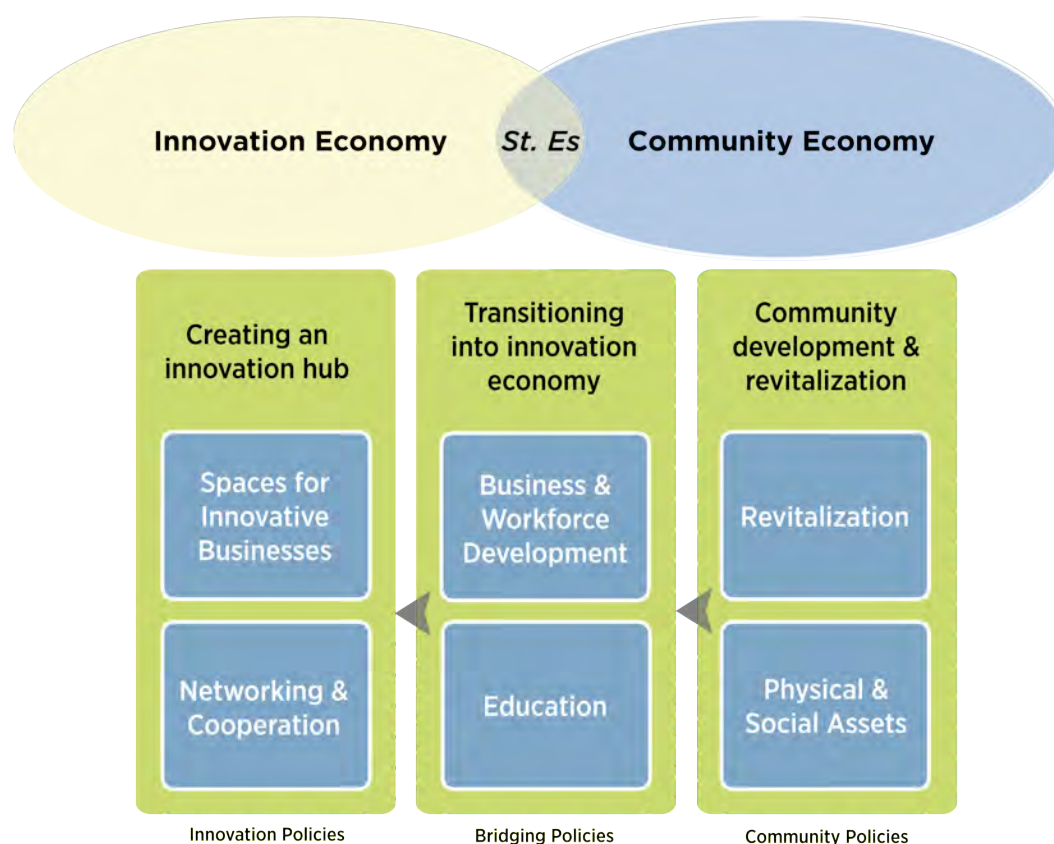
The Saint Elizabeths East Campus offers a variety of advantages for the location of an innovation hub: its capacity to host a cluster of facilities and programs that serve the needs of the future federal anchors on the adjacent West Campus; its potential to link East of the River entrepreneurs and residents to business and employment opportunities throughout the region; its direct access to transit, connecting it to the region; its potential to attract private sector investment for the development and commercialization of innovative approaches and solutions in national security and intelligence; and its ability to serve as a showcase of new technology and products, leveraging the international visibility of the nation's capital.

1. Executive Summary and Key Findings

Purpose

Funded by a grant from the Economic Development Administration (EDA) and led by the DC Office of Planning (OP) in collaboration with the Office of the Deputy Mayor for Planning and Economic Development (DMPED), the District commissioned research to characterize and quantify its homeland security economy in order to identify bridging strategies that could link local entrepreneurs and residents to business and employment opportunities in this sector and related defense, intelligence and security industries. Policies focused on revitalization within Ward 8 as well as the development of both physical and social assets were developed alongside policies focused on the further development of the innovation economy. These two efforts are linked by way of bridging policies, which focus on business and workforce development, education, and other support systems to help strengthen the ties between the community economy that surrounds Saint Elizabeths and the broader innovation economy (see Figure 1).

Figure 1 - Bridging the Community and Innovation Economies



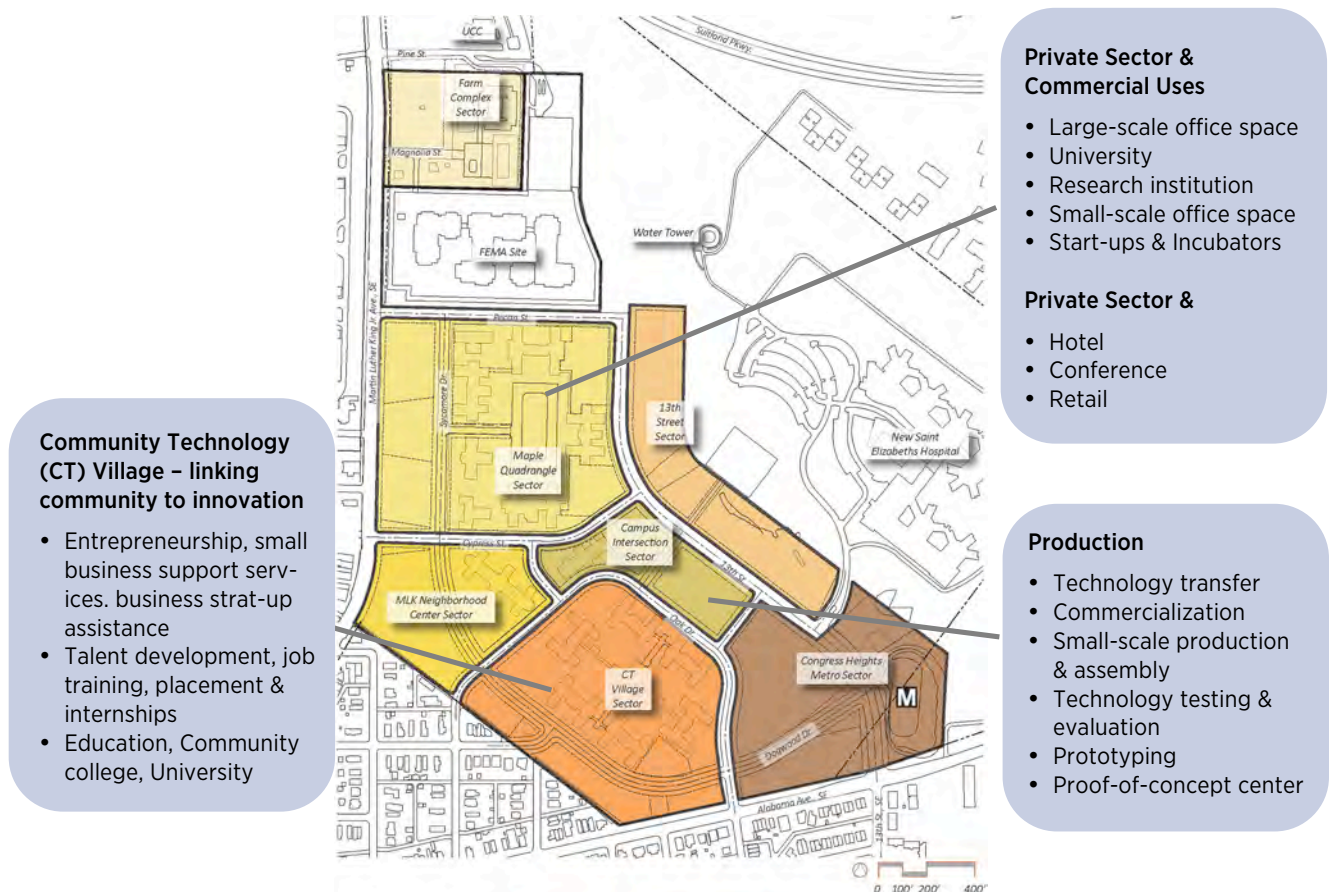
A key focus was on the potential for an innovation cluster, and the specific opportunity for an Innovation Hub located at the Saint Elizabeths East Campus, with programs connecting the hub to assets in Ward 8 and the District. The broader opportunity envisions physical development and social programming to support an innovation ecosystem that helps connect Ward 8 and District residents to the opportunities afforded by a thriving homeland security economy.

Vision

The Innovation Hub at Saint Elizabeths is envisioned as an integrated center of research, education, training, entrepreneurship, technology transfer, and private sector commercial activities. The hub supports neighborhood revitalization efforts and positions the District at the core of a regional innovation economy by leveraging the presence of homeland security, defense and intelligence agencies, and the network of contractors and innovators that engage with these agencies.

The Innovation Hub is an integral part of a larger development program for the East Campus, which includes 4.8 million square feet of mixed use development, with housing, retail, cultural, office, institutional, hotel, hospitality and other uses. The St Elizabeths East Master Plan currently anticipates three main types of uses within the Innovation Hub, including a Community Technology Village, designated areas for private sector and commercial uses, and production spaces for prototyping, manufacturing, and commercialization functions (see Figure 2). The overall redevelopment of the East Campus would create a place that is supportive of innovation, providing the spaces and amenities for entrepreneurs, employees, innovators and residents to live, work, exchange ideas and build community.

Figure 2 - Innovation Hub as Depicted in East Campus Master Plan



In this sense, the Innovation Hub – from a physical standpoint – is conceived of as a set of adaptively reused and new buildings that take advantage of urban form, a mix of uses and transit access. This Hub

should be a model for national security-related research and development, innovative approaches in technology transfer and public-private partnerships, incubation and commercialization, as well as for regional collaboration and community growth. Coordination among multiple federal and District agencies, as well as private and non-profit sector entities is key to ensuring a set of viable and sustainable economic outcomes for Ward 8, the District, and the broader region.

While the DHS consolidation has not yet been funded beyond the relocation of the Coast Guard headquarters, plans for the development of the East Campus – both physical and programmatic – are still on track. The industry sector that DHS represents – national security – will continue to be a significant contributor to the District and regional economy. Additionally, local and national organizations and corporations that will serve as the pillars of the Innovation Hub remain committed to locating on the East Campus. The planning and research process has identified an important role for the Innovation Hub to address gaps in the capacity of the local business ecosystem by including opportunities for training, networking, technical assistance, and youth engagement in a variety of security and technology fields. Local service providers and community organizations in Ward 8 have expressed an interest in implementing programs at the Innovation Hub to meet these needs.

Based on this research on the characteristics of the homeland security economy and the neighborhoods near the Saint Elizabeths campus, a framework has been developed detailing actions to bridge these gaps and to assist in the development of an Innovation Hub nested within the broader homeland security economy and innovation ecosystem. The strategy is intended to be comprehensive in nature in order to capture the array of facilities, programs, and partnerships that are needed as part of this ongoing process. As such, the strategy seeks to:

- Leverage federal anchors, play to District strengths, and tap into regional assets;
- Improve the competitive advantages that the Washington, DC region has in homeland security-related sectors, including emergency preparedness and response, intellectual property rights, cyber security management, and critical infrastructure protection;
- Promote small business development, incubation and commercialization opportunities;
- Attract businesses and contractors, entrepreneurship and investor networks;
- Coordinate and promote research and education opportunities for homeland security and defense-related fields (e.g. regional university consortium, community college); and
- Link residents to employment opportunities and provide job training, education and career path development in security, technology, and innovation fields.

This study includes several components that provide the basis and for development of an Innovation Hub at Saint Elizabeths: an asset and opportunity analysis that assessed the District's competitive position; a procurement analysis of homeland security contracting activity; an assessment of the community economy and assets in neighborhoods surrounding Saint Elizabeths; research into other innovation hubs that leverage the presence of anchor institutions in other regions; and a blueprint for an Innovation Hub at Saint Elizabeths with specific implementation strategies. These research and analytical efforts, along with the input of DHS leadership, homeland security experts, private sector partners, local and federal government officials, and Ward 8 stakeholders, have informed the findings and recommendations.

The study is intended to support neighborhood revitalization efforts and position the District at the core of a regional innovation economy, leveraging the presence of homeland security, defense and intelligence agencies, contractors and innovators. After reviewing industry economic activity, needs, local capacity to meet those needs, and gaps in the local business ecosystem, the research highlighted several key solutions, including:

- Focusing on the broader innovation economy rather than just homeland security;
- Building a community-based innovation ecosystem East of the River that grows entrepreneurship and talent;
- Establishing partnerships and networks with the private, public and institutional sectors; and
- Leveraging the visibility of DC as place for demonstration and testing of ideas.

DC and Regional Economy

Washington, DC is the core of a metropolitan area that encompasses 22 jurisdictions in Maryland, Virginia, and West Virginia. The regional population in 2010 was estimated at approximately 5.6 million residents, with approximately 610,000 in the District, 2.3 million in Maryland, and 2.6 million in Virginia. As the seat of the Federal government, Washington DC is a major regional employment hub and economic engine, accounting for only 10% of the region's population but over 20% of the region's jobs. The region has nearly twice as many jobs in the professional, scientific and technical services sector as the United States as a whole, and includes a diverse array of businesses from law and accounting firms to computer design and scientific research. The majority of the region's Federal government jobs are located within the District itself, as are large portions of the region's jobs in the education, professional and technical services, and information sectors. The region has relatively fewer jobs in retail trade, manufacturing, and local government than the nation as a whole. With less reliance on shrinking sectors like manufacturing and large concentrations of employment in growing sectors such as professional services, employment in the Washington region has grown more quickly than in the US as a whole.

The mix of industry sectors that are prevalent in the Washington region often require highly educated workers. The region has a much higher concentration of management and professional occupations than the nation as a whole, and a lower concentration of workers in production, transportation and construction occupations. A small but growing segment of these management and professional workers are employed within the homeland security industry, which is part of the much larger defense, intelligence and security industry cluster in the region. The region is home to federal agencies such as the Department of Defense and the Department of Homeland Security, as well as a range of federal research laboratories. A network of private defense, intelligence and security companies have located in the region to serve these federal agencies. These firms benefit from close geographic proximity to federal agencies and laboratories. The Innovation Hub at Saint Elizabeths capitalizes on this growing need for proximate facilities, innovative commercial and office spaces, and quality laboratory facilities to serve both the homeland security and broader innovation economies.

The Homeland Security Economy

Over the course of the decade since the terrorist attacks in 2001, a large and diverse array of jobs and business opportunities have grown around the 'homeland security' economy. This industry sector centers on the Department of Homeland Security, which employs more than 220,000 people across the United States, of which about 27,000 work in the DC region. The economic impact of DHS is substantial, including the additional employment at and spending with contractor firms, service firms, and other private businesses that serve DHS.

The economic development opportunities that DHS produces are focused in five key areas: contracting and procurement; commercialization and business development; science and technology; education and research and development; and workforce development.

Contracting and procurement:

DHS works closely with the private sector to procure homeland security products and services, allocating over 26% of its 2009 budget for this purpose. Between 2005 and 2010, firms in the Washington DC region captured more than 44% of DHS' domestic spending. The Innovation Hub at Saint Elizabeths can help the District capitalize on these continuing opportunities for area firms and workers by capturing more of these contracts within the District's boundaries.

Commercialization and business development:

The DHS Commercialization Office works with the private sector to develop products and services that meet DHS needs. Two programs - SECURE and FutureTech - focus the agency's efforts toward commercialization and business development, and may offer opportunities for cooperation and knowledge exchange within the DC region. The Innovation Hub will play a key role in creating networking opportunities and fostering cooperation amongst key homeland security stakeholders within the hub.

Science and Technology:

DHS' Science and Technology (S&T) directorate carries out much of its work through public-private partnerships. Emerging programs such as the customer-led Capstone Integrated Product Teams (IPTs) may provide regional firms and workers with opportunities in the homeland security economy. Innovative spaces, offices in close proximity to DHS, and targeted programming within the East Campus Innovation Hub may aid in the development of these public-private partnerships that S&T increasingly relies on.

Education/ Research and Development:

DHS' Office of University Programs (UP) oversees three main areas of education and research: DHS Centers of Excellence (COEs), Education Programs, and Minority-Serving Institutions (MSIs). Though only two of the Department's 12 COEs are presently located in the area, there may be opportunities to develop other COEs in the District or the region in the future. Educational and research facilities will play a central role in the Innovation Hub; their presence on the East Campus will allow area workers to improve their educational and research qualifications and will provide area firms with a better-educated workforce.

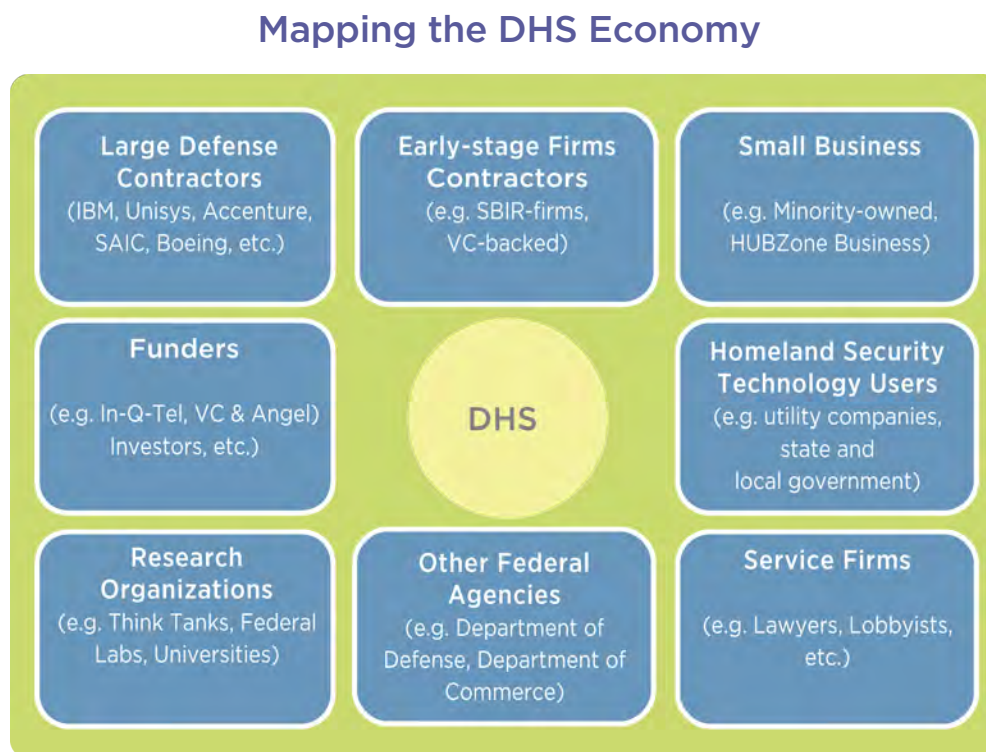
Workforce Development:

At present, DHS-related workforce development and job training occurs in a variety of institutions in the Washington metro area and beyond. The potential exists for DHS to collaborate with local commu-

nity colleges and universities to provide workforce development and job training on the Saint Elizabeths East Campus. Though not all of the Ward 8 or District residents who receive such training will find work within DHS itself, many of the opportunities available to them within the Innovation Hub will likely be of use in the broader homeland security economy.

Additional opportunities exist beyond these five key areas because DHS plays an important role in the region's broader homeland security economy, particularly through procurement of products and services from the private sector. The industry concentrates in a few regions in the United States, and the Washington DC metropolitan area accounts for the highest concentration of firms and organizations that develop homeland security products and services. The homeland security economy consists of large government contractors and a range of support institutions that cluster around federal government agencies such as DHS (see Figure 3).

Figure 3 - Homeland Security Economy, Major Players



The District of Columbia is the most important location for homeland security contractors within the Washington DC regional economy. Total homeland security procurement in the District amounted to more than \$15.5 billion from 2005 to 2010, with increases of 14.1% per year during that time period (compared to 8.3% for the Washington MSA as a whole and -2.3% for the United States as a whole). Much of the growth in the District is the result of a growing number of firms that specialize in high-tech products and services, such as consulting services, custom computer programming services, engineering services, architectural services and computer systems design services. Between 2005 and 2010, the District captured the largest share of high-tech procurement (42.6%, \$7 billion) in the region, followed

by Arlington County (25.3%), and Fairfax County (19.7%). Building on these emerging strengths is an important priority for the Saint Elizabeths campus.

Many of the District's larger firms specialize in systems integration and solutions related to homeland security. Typical areas in which these firms specialize are: IT services, cyber security, communications systems, border management and security, infrastructure protection, emergency preparedness, contingency operations, and transportation security, among others. Focus group and interview data suggest that the region is also comparatively strong in terms of homeland security policymaking and policy analysis, given the number of consultant, professional service, and lobbyist firms that locate within the District. The District has a variety of minority-owned businesses that contract with DHS. From 2005 to 2010, minority-owned businesses earned more than \$11 billion in contracts nationally (14% of total DHS procurement) and District-based minority-owned businesses received \$2 billion of this total. Though these contracts make up only a small portion of annual DHS procurement outlays, they represent an important and growing opportunity for small- and minority-owned businesses to capitalize on the burgeoning homeland security economy at Saint Elizabeths, within Ward 8, and elsewhere in the District.

The expertise and capacity of the existing network of firms in the region that have arisen to serve DHS' contracting needs gives the region significant competitive advantages for securing further homeland security-related investment and jobs. ***The Innovation Hub can play an important role in helping to maintain that competitive advantage by providing physical and programmatic elements to support partnerships and networks among private, public, and institutional partners within the homeland security and broader innovation economy.***

An important historical strength of the Washington region is its highly educated and talented workforce in the area of homeland security and other defense-related industries. The region is home to a variety of education and innovation assets, many of which directly relate to the broader missions of DHS. A combination of university research centers, federally affiliated educational institutions, federally funded research and development centers (FFRDCs), community colleges, and other related regional institutions collectively complement and support DHS operations in the District and in the larger region. Though universities in the region have lower average rates of technology transfer and commercialization than others in the nation, the region has a significant concentration of academic expertise in homeland security studies and strong ties between universities and industries.

While the District of Columbia has strengths in homeland security science, technology, and policy, it is weaker than other jurisdictions in creating new products and services (as measured by patents). In contrast, Maryland and Virginia show strong specializations in technology areas that are critical to their economic sectors (data processing in Virginia and biotechnology in Maryland). Similarly, the District does not show strong entrepreneurial and commercialization dynamics in homeland security (as measured by SBIR and venture capital data). For example, no District-based firms have received Small Business Innovation Research (SBIR) grants. In addition, In-Q-Tel, an investment firm chartered by the Central Intelligence Agency to support commercialization of intelligence and national security innovations, has not invested often in District-based firms. These weaknesses are compounded by the fact that the District does not have a technology-based economic development (TBED) program or organization similar to TEDCO in Maryland or CIT in Virginia. ***Creating a TBED program is just one of the many steps that may help to fur-***

ther the development of the homeland security and innovation economy and increase the visibility of the District as a place for commercialization, as well as a place for the demonstration and testing of ideas.

Community Economy (Ward 8)

The existing assets and socio-economic characteristics of the community surrounding the Saint Elizabeths East Campus suggest opportunities for local businesses and residents to connect with the new development of the DHS campus. The area surrounding Saint Elizabeths includes the neighborhoods of Congress Heights, Barry Farm, Bellevue, Buena Vista, Douglass, and Anacostia. These neighborhoods have a number of key assets that could prove helpful in building an innovation ecosystem East of the River. These include location and proximity to downtown DC, as well as connectivity via the Metrorail stations at Anacostia and Congress Heights, and a number of highway and bridge access points. Ward 8 also has a number of historic and culturally significant sites, including the Anacostia Museum, Fort Dupont Park, and Frederick Douglass National Historic Site.

In many ways, Ward 8 is well positioned for economic development and growing an innovation-cluster supply chain. The ward has an increasingly robust institutional and private sector support structure, including numerous business support groups and intermediaries operating within the community. Many of these organizations have already begun efforts to cultivate entrepreneurs and support small businesses within these neighborhoods. These civic leaders and institutional efforts, along with recent significant public and private investments, are supporting new residential and retail options, as well as improved schools, libraries and transportation infrastructure. The Saint Elizabeths campus itself is a key asset, with the potential for its redevelopment to transform the ward into a significant business and jobs center.

East of the River also boasts a growing and substantial concentration of human capital; over 50% of employed residents work in management, professional and office occupations. Nearly 8,000 residents work in the professional and administrative services sectors, and nearly 12,000 in health and education – occupations that may prove helpful in securing employment within the broader homeland security economy. This human capital, along with physical assets and the business and educational programs that are taking shape within Ward 8, provide an important foundation for emerging economic development efforts in the neighborhoods surrounding Saint Elizabeths.

Despite these assets, much of Ward 8 has faced significant socioeconomic challenges in recent decades. The communities of Ward 8 have comparatively higher rates of poverty and lower household incomes than other parts of the District and region. Unemployment in Ward 8 is the highest in the city and educational attainment is lower than average, with over 50% of Wards 7 and 8 residents having a high school education or less. Many of these residents will require additional education or training in order to access jobs in the specialized occupations that are common to DHS and professional service firms in DC and the region.

In terms of business activity, very little DHS procurement activity has occurred in Ward 8, which captured only 0.12% of total homeland security procurement activity in the District of Columbia from 2005 to 2010. In addition, the top 10 vendors performing work in Ward 8 are not located or headquartered there, resulting in substantial leakage of revenue from Ward 8. Most of these firms are traditional government contractors, some of which were acquired by large systems integrators such as Computer Sciences Corporation or General Dynamics. The contracting work that has occurred in Ward 8 relates mostly to

high-tech products and services, but some non-high tech related activities such as building construction, security guards, and patrol services have provided some employment opportunities for local residents.

Focus group participants and Ward 8 leaders indicated that Ward 8 has the potential to capitalize on the revitalization of Saint Elizabeths but emphasized that doing so will require clear communication channels regarding funding opportunities and partnerships with DHS and related agencies, initiatives to promote small and minority business development as part of an industry supply chain, and non-traditional learning programs and educational pathways for Ward 8 residents. These pathways should focus on several growing regional occupations that serve not only the homeland security economy, but also a variety of employers in the region. Data suggest that appropriate targets for Ward 8 workforce development efforts include security/law enforcement occupations, administrative/office occupations, and computer/IT occupations. ***Augmenting the existing training programs that target these occupations can provide a range of employment opportunities for Ward 8 residents both within the homeland security economy and the broader intelligence, defense and technology sectors, and can help cultivate an innovation ecosystem through entrepreneurship and talent development.***

DC is Positioned for Success in the Innovation Economy

<p>Business Development</p> <ul style="list-style-type: none"> • High levels of homeland security procurement activity and industry strengths in intelligence and policymaking • Access to federal agencies, industry experts and decision makers • Large and diverse customer base • Robust and growing venture capital community • Increasingly active private and institutional support structure in Ward 8 • Opportunity for small and local businesses to increase contracting with federal and private sectors 	<p>Talent and Education</p> <ul style="list-style-type: none"> • Highly educated and talented workforce in security cluster • Strong universities, community college and workforce development providers • Growth in administrative, security and IT occupations in supporting industries • Existing STEM and internship programs that can be leveraged and expanded • Employment concentrations of Ward 8 residents in management, professional and office occupations • Opportunity to develop clear education and career pathways for security and intelligence occupations
<p>Support Infrastructure</p> <ul style="list-style-type: none"> • DC is at the center of a strong transportation network, including metro • Significant investments in Ward 8, including transportation, housing, schools, libraries and retail • Large scale of Saint Elizabeths campus can accommodate a mix of uses (retail, office, housing) that are complimentary to innovation • Investments in infrastructure will provide for new utilities, telecommunications and roads • Campus construction to incorporate green and sustainable practices, and support local jobs 	<p>Research and Development</p> <ul style="list-style-type: none"> • Unique regional academic expertise and ties with industry and government • Existing strengths in cybersecurity, emergency management and security policy • Proximity to federal technology initiatives • Public and private programs to support security-related technology commercialization • Increasing levels of venture capital and patent activity in the region • Opportunity to strengthen university-industry links and grow innovation and commercialization activities

Together, the Ward 8 community economy and the broader homeland security economy provide a strong platform for economic development endeavors within the Innovation Hub at Saint Elizabeths. Identified strengths in both the DHS economy and within Ward 8 will act as the foundation for emerging opportunities at the Innovation Hub.

Implications for Saint Elizabeths East Campus Innovation Hub and Strategy

The research findings and stakeholder interviews have several implications for components of the Saint Elizabeths East Campus Innovation Hub and the District's innovation economy, both in terms of serving the needs of DHS economy stakeholders and in terms of increasing economic opportunities for local residents.

Entrepreneurship, innovation and business development

- The Washington metropolitan area is the most important location for firms working in the homeland security economy. Top regional and DC-based contractors include large firms that specialize in systems integration and solutions, known as 'systems houses.' These firms coordinate closely with contracting federal agencies and often co-locate, suggesting these large firms may have an interest in office space at the East Campus near the DHS headquarters.
- While the District seems to capture a fair amount of contracting activity, small and minority-owned firms in Ward 8 have received a disproportionately small share. The Innovation hub could address this gap with programs to increase the competitiveness of local firms, such as workshops on contracting with federal agencies or information on subcontract opportunities available within the large 'system houses.'
- There is an opportunity to accelerate innovation and commercialization, particularly amongst small businesses. DC-based firms have not been awarded SBIR investments from DHS to support development of innovative products and technologies, but several firms in Virginia and Maryland have received these investments. The Innovation Hub and Strategy may improve DC's ability to attract and grow innovative firms in the homeland security economy by providing a variety of support programs and facilities.
- Based on feedback from industry stakeholders, innovation has great potential to transform the way the federal government operates, promote entrepreneurship, and strengthen linkages between the private sector and federal government. In broadening the focus beyond homeland security to the broader intelligence, defense and innovation economy, the Hub can provide a more robust framework for entrepreneurship and economic development.
- Industry and community stakeholders suggested a range of elements for the campus, including an incubator, test bed; public investment for venture; partnerships between the SBIR program and the investment community; programs to promote small and minority business development research consortium; mentor programs; and efforts to increase collaboration between firms, entrepreneurs, universities, and the investment community advanced concepts labs and prototyping facilities; and a demonstration "marketplace" for DHS products and services.

Career pathways, talent and workforce development

- DHS employment in Washington DC has particularly high concentrations of management, administrative, and security occupations. About 93% of DHS jobs are at GS-level 8 or above, requiring advanced degrees and/or several years of experience. Although direct employment at DHS may be a difficult match for lower-skill workers, jobs in supporting industries and in the larger security, intelligence and defense cluster offer a broader set of entry-level and career-ladder opportunities.
- Many common jobs at private businesses in the industry sectors that support DHS (professional and technical services, administrative services, and educational services) require only vocational or on-the-job training, and less experience than jobs within DHS. Training providers offer services for these occupations, as well as other services, such as career counseling, assessment and basic 'soft skills' development for job-seekers. These training providers could complement the workforce development or employment services functions that the Saint Elizabeths campus plans to offer.
- The region has several universities with research centers focused on issues relevant to the homeland security economy, as well as relevant degree and certificate programs. Co-location at the Saint Elizabeths innovation hub provides an opportunity for these various research centers to improve technology commercialization efforts, invest in shared resources, and engage local residents and students.
- Industry and community stakeholder expressed strong interest in a 'Homeland Security University' campus that provides a common location to offer existing homeland security-related courses and degrees; a consortium of participating universities and businesses to support cyber research; creating a DHS Center of Excellence focused on commercialization of DHS technologies; establishing a pre-clearance processing service; and creating programs to match residents to DHS or related jobs.
- Stakeholders noted that the Hub offers a significant opportunity to connect youth in Ward 8 to higher education and career development programs, including a focus on STEM and career pathways that can prepare students for occupations in the innovation economy. Support programs could include internship, mentoring, and/or curricula that combine education with job training.

Innovation Strategy: Bridging the innovation and community economies

The Saint Elizabeths East Campus represents a rare opportunity to implement a comprehensive Innovation Hub where all necessary contributing assets can be co-located by design and undertaken – from the outset – as part of a coordinated economic development strategy. The findings from this study suggest that an Innovation Hub that provides substantial opportunities for local residents to participate will play an integral role in the successful economic development of the Saint Elizabeths campus and the surrounding neighborhoods.

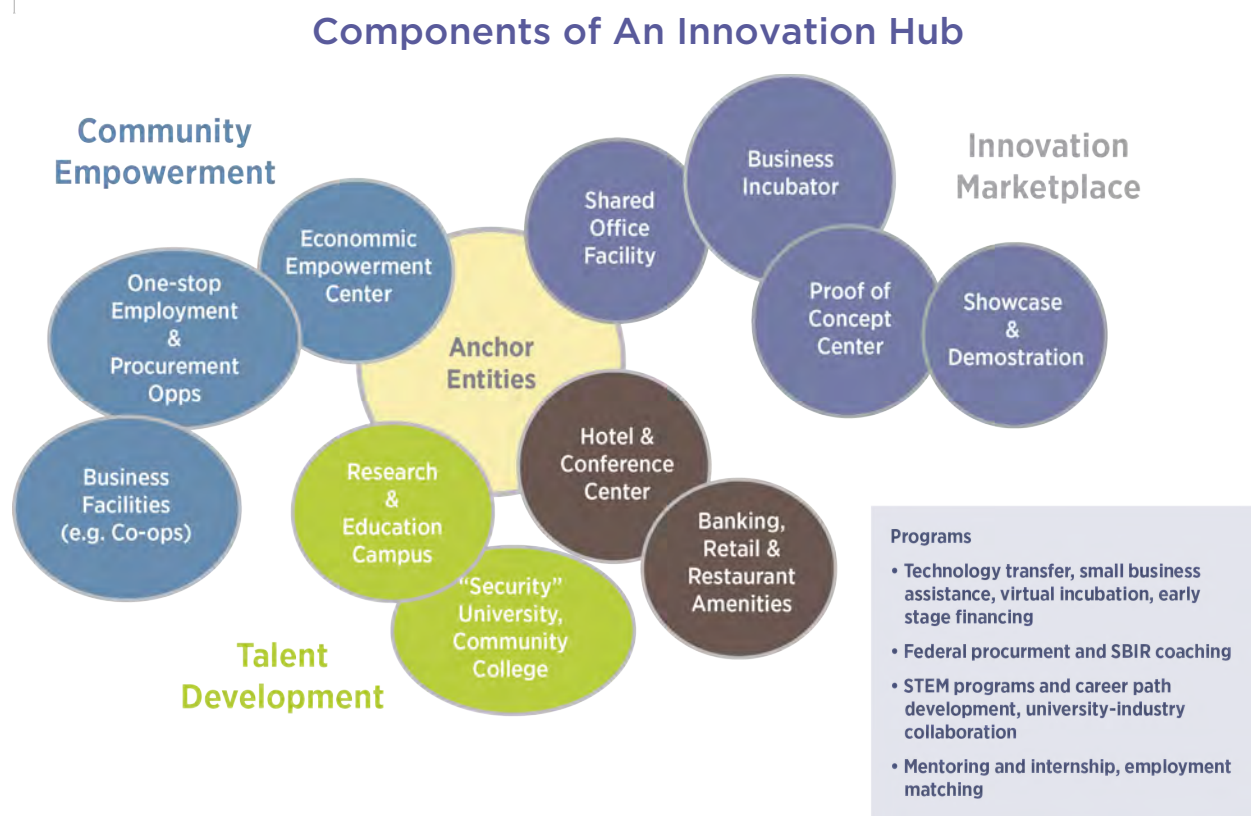
Saint Elizabeths is poised to become a magnet where all of the key organizational actors find value in creating a physical presence, whereby proximity could promote deal making, catalyze investment and accelerate the development of a self-sustaining, innovation-driven economy. When fully operational, the Hub will include three central community and economic development functions:

- An innovation marketplace to develop and showcase new technologies and businesses, driven by but not limited to innovations in support of homeland security and defense-related technology sectors;
- A community economic empowerment center that provides coordinated support for local businesses, entrepreneurs and job-seekers, linked to the social services they need; and helps manage

the evolution of campus programming to promote economic revitalization through increasing community ownership; and

- A talent development campus to provide offerings designed by regional institutions of higher education and workforce development organizations, serving students ranging from K-12 through professionals in a variety of occupations seeking advanced career credentials.

Figure 5 - Innovation Hub Components in Community and Innovation Economies



The design of the overall campus should promote as much interaction as possible among these three centers and allow for some overlap among their functions. The Saint Elizabeths East Campus will complement the Innovation Hub with a mixed-use development including mixed-income residential options, attractive retail and restaurant amenities, comfortable indoor and outdoor public spaces designed to promote both social and business networking, good transportation connections to the Congress Heights Metro station, and infrastructure such as broadband Internet access consistent with its role as a state-of-the-art technology hub.

Industry experts and community stakeholders have proposed a variety of facilities and programs to address these goals. Several strategies have physical space requirements that can help guide the renovation of buildings and redevelopment on the East Campus, while others are programmatic resources that could begin operations anywhere. Ideally these programs will find a home at the Innovation Hub when space becomes available (see Figure 5).

Action Strategy

The establishment of the Innovation Hub at Saint Elizabeths and the successful delivery of its programs will require ongoing planning, partnerships among government, businesses, educational institutions and community organizations, and significant investment over the long term. The DC Innovation Strategy offers a comprehensive set of actions that can guide this effort, with strategies categorized as 'Innovation Marketplace,' Community Economic Empowerment or 'Talent Development' and phased over time. The following are considered priority strategies — catalytic actions that can provide the critical mass and momentum for the Innovation Hub, and lay the foundation for some of the longer-term steps. These strategies include 'physical' actions that have facility needs and can help guide the renovation of buildings and redevelopment on the East Campus, as well as 'programmatic' actions that could begin operations elsewhere in the ward/community and ideally find a home at the Innovation Hub when resources and appropriate space becomes available.

Priority Strategies

Innovation Marketplace

Promote **Virtual Business Incubation** and Support through a suite of programs that provide access to business incubation services, such as technical assistance, early stage financing and back-office support services. The services would be targeted to start-ups and existing small businesses that are not located within a physical incubator but are seeking to participate more fully in the innovation cluster supply chain. Businesses could receive 8A and HubZone certification support, procurement-targeted programming, 'transaction-ready' assistance, and small-business lending support, drawing upon federally- and locally-funded programs.

Key activity: Link entrepreneurs to existing business start-up and support programs that equip businesses with the skills, tools, resources, and networks to launch and expand. Support and promote programs including those offered through DSLBD (e.g. Kaufman FastTrac), SBA and the SBDC network that focus on business concept feasibility and market-readiness.

Create a **Strategic Partner/Matchmaking Program** that provides an incentive for established corporations, organizations, and/or anchor institutions to team with smaller, innovative and minority-owned firms in pursuit of contract opportunities. Awards of such incentives could emphasize commercialization partnerships (e.g. joint development of new products for export to private sector customers beyond the local and regional economy) as well as the more traditional customer-vendor relationships that have been at the core of the existing federal procurement-driven regional economy. Partnering could be facilitated via a dynamic search instrument that streamlines the matchmaking process.

Key activity: Leverage and strengthen existing initiatives such as DSLBD's Joint Venture Program, which encourages large and small firms to establish new companies in pursuit of contracting opportunities

Programmatic -
Community

Programmatic -
Community

Provide **Targeted Procurement** Assistance such as workshops where security/intelligence agencies and their prime contractors work with local community organizations and business associations in Wards 7 and 8 to target specific existing businesses in these areas. Workshops will help build a knowledge base and relationships between the agencies, prime contractors and local businesses. Consider an information portal that offers a centralized platform for information on workshops and related activities.

Key activity: Seek to increase the number of local HUBZone-certified businesses and increase federal contract awards to HUBZone businesses through the HUBDC pilot initiative. Also, leverage existing initiatives such as DC's Procurement Technical Assistance Center, which targets contracting with DoD and other federal agencies.

Develop a **Technology Showcase and Demonstration Facility** where companies showcase their products and services while investing in later stage technologies that have initial customers. The Facility would act as a marketplace where the best new innovations are evaluated, reviewed and showcased, facilitating interactions between the public and private sectors, as well as coordination around production solutions. Link demonstration activities in initial phases to innovation anchor tenants and in later phases to the Proof-of-Concept and Testing/Evaluation Centers.

Key activity: Attract innovation anchor tenants to the East Campus that showcase and demonstrate technologies (including through conferences and exhibitions), and can help catalyze a full Innovation Marketplace.

Programmatic -
Community

Physical - St Es

Talent Development

Pursue the establishment of a **University** and/or **Educational Consortium** that offers educational programs and supports research aligned with the region's high growth clusters and employment demand. The University's offerings could include undergraduate, graduate and professional programs for traditional and non-traditional students in areas of importance to the homeland security and innovation economy. The initiative would promote strong relationships among regional universities and with the employer and investment communities. The University could also be a 'satellite' location for regional institutions that offer appropriate programs as part of an educational consortium.

Key activity: Attract anchor education tenant(s) to the East Campus whose program is aligned with those of the innovation anchors and targeted sectors of the regional economy. Create partnerships between educational entities and anchor tenants, and promote training and workforce development programming supported by anchor institutions.

Physical - St Es

Identify career opportunities and design appropriate programs to enhance **Educational Pathways** offerings for K-12 students, especially those aimed at increasing students' understanding of careers in the homeland security and innovation economy. This could include a focus on **Science, Technology, Engineering, and Mathematics (STEM)** programming so that cohorts of students build expertise over time that is well aligned with available opportunities. Consider whether new partnerships with existing DC schools and postsecondary institutions that focus on career and technical education are needed.

Key activity: Launch OSSE's STEM Learning Network that focuses on STEM-infused curricula, internships and activities; leverage the private sector in support of the program, capacity-building and co-investments with the District. Also, expand and enrich citywide career and technical education programs, including adding DCPS cyber security courses and coordinating with private and public partners on shaping curriculum and work-based learning opportunities for students.

Expand/refine existing and launch new (as needed) **Workforce Training** programs in Ward 8 that link adults to careers in the homeland security and innovation economies, including in supporting sectors/occupations. Coordinate with federal agencies, the private sector/contractor supply chain, postsecondary institutions and existing service providers in the design of career pathway programs, and tap into existing efforts and resources. Initiatives could include apprenticeships and on-the-job training, and target entry-level through higher-skill positions such as: management analyst, accountant (bachelor degree); computer support specialist, administrative supervisor, legal secretary, (associate's degree/vocational training); groundskeepers, security, office clerks (on-the-job training). Initially, the focus could be on a few well-defined career pathways for jobs that are readily accessible such as supporting sectors (retail, hospitality, construction).

Key activity: Establish a pilot program through the Ward 8 Budget Challenge that links residents to training such as work-readiness and pre-apprenticeship in order to prepare them for jobs related to construction and green infrastructure development on the East Campus. Also, seek to increase the number of Eligible Training Providers providing IT-related occupational training for low-income District residents.

Programmatic -
Community

Programmatic -
Community

Community Economic Empowerment

Offer targeted and coordinated **Entrepreneurship and Workforce Development** support at the Innovation Hub. Offerings should include programming to prepare residents to establish and operate new businesses, workforce/skills development, as well as capacity-building for local service providers. Training would also target the specific needs of female entrepreneurs, existing informal entrepreneurs and local residents. Programming should be coordinated with small business technical assistance to enable a seamless transition of services once individuals establish their formal businesses, as well as with employment training and placement programs.

Key activity: Coordinate with East Campus anchor innovation and education tenants and District agencies in the provision of entrepreneurship and workforce training initiatives. Also leverage pilot training and business development initiatives under the Ward 8 Budget Challenge and Sustainable DC such as those related to green infrastructure development and food incubation.

Promote a **Culinary Incubator** program that supports entrepreneurs and small businesses, trains culinary workers, and provides expanded dining options for residents and employees of St Es federal tenants, contractor firms, and the security, defense and intelligence cluster. Use this as a pilot initiative for eventual full-scale renovation of the existing commercial kitchen on the East Campus into a shared kitchen workspace and incubator that fosters entrepreneurship, offers culinary/business education and provides community space for the promotion of healthy foods.

Key activity: Launch a food incubator pilot project in Ward 8 that promotes entrepreneurship, offering shared commercial kitchen space and technical assistance. The program would also link entrepreneurs to vending and dining opportunities on the East Campus.

Launch a **Cooperative Businesses Strategy** that enables employee-owned firms to provide goods and services to the security and innovation supply chain and contractor firms, while also creating quality jobs for residents in employee-owned firms that hire and operate locally. As part of the strategy, provide support for the cooperative businesses' workforce training needs, as well as technical assistance and access to financing, aligned to the specific needs of businesses.

Key activity: Investigate cooperatively-owned business models based on local procurement opportunities and the workforce skills of residents in Ward 8 neighborhoods. Leveraging DHCD's Community Challenge Planning grant, conduct assessment and identify the next steps required to establish and begin cooperative business operations.

Physical - St Es

Physical - St Es

Programmatic -
Community

2. The Saint Elizabeths Opportunity

Economic Context

The Saint Elizabeths East Campus offers an unparalleled opportunity for the District to diversify its economy and enable local businesses and residents to tap into the innovation economy. The District sits at the center of a robust regional innovation economy, with strengths in the national security, defense and intelligence industries. This regional economy is underleveraged by the District, and offers potential for growth in terms of employment, research, technology transfer, commercialization and business development in a way that can transform Ward 8, East of the River communities, and the District.

As the economic hub for the region, the District has benefitted from the presence of the federal government in terms of supporting a stable employment base, and leasing and contracting activity. This federal presence has buffered the District to some extent from issues in the larger national economy, and the city continues to grow its population and attract talent, as investments channeled into communities – in particular emerging neighborhoods – improve amenities and quality of life. Reliance on the federal government though has also spurred the need for diversification and the growth of other sectors, such as the technology, creative and green economies. There is also a need to ensure District residents are adequately prepared for employment opportunities, which is becoming more critical as the District's economy produces higher-skill jobs. And there is a continued need to focus on business growth, so that local entrepreneurs may access procurement opportunities, as well as innovate and develop their own products.

Providing expanded economic opportunities East of the River is a priority of the District. Neighborhoods and residents in Ward 8 have faced persistent socio-economic challenges as indicated by high unemployment, low household incomes, low educational attainment and high poverty rates. The need for job creation, targeted vocational training, job placement and retention program is pressing, with the lack of major employment centers and anchors compounding the issue. Additionally, although technology entrepreneurs are starting up businesses across the District and innovating new products, the benefit of this activity are not yet seen fully in Ward 8.

The Saint Elizabeths Opportunity

A strategic approach to economic development of Saint Elizabeths East will allow the District to harness its expanding technology sector and grow the entrepreneurial base and talent capacity in neighborhoods East of the Anacostia River. The approach leverages the regional innovation economy and untapped opportunities around the commercialization of research through enhanced university-industry relationships. This approach also leverages opportunities in the broader security, energy and sustainability sectors as well as proximity to the West Campus, the site of future federal anchors whose procurement needs have the potential to spur an innovation supply-cluster chain in Ward 8 and the District.

The potential for the redevelopment of the Saint Elizabeths East Campus to serve as a catalyst for this growth is significant. The campus is an ideal location for an innovation hub – an integrated center of research, education, training, entrepreneurship, technology transfer and private sector commercial

activities – given its capacity to host a cluster of facilities and programs in proximity to federal anchors on the West Campus; its potential to link East of the River entrepreneurs and residents to business and employment opportunities; its direct access to transit, connecting it to the regional innovation assets; its potential to attract private sector investment and to act as a model for innovative approaches and solutions in national security, given the international visibility of the District as a platform for showcasing research and products.

The hub would sit at the center of the regional economy, leveraging economic drivers and strengths. Federal procurement has been an exceptionally strong economic driver and job creator, providing significant contracting opportunities for private-sector technology-based firms and high-quality professional and technical service jobs within many of the nation's best-respected federally-funded research and development centers. Federal procurement overall in the region approached \$75 billion. Multiple agencies including Defense, Homeland Security, and NASA contribute to the regional total. The National Capital Region is the dominant player nationally for federal Department of Homeland Security procurement; in 2009 DHS procurement originating in Greater Washington exceeded \$7 billion. Along with increasing Department of Defense spending, which is at least twice as large as Homeland Security spending, the region has become one of the most affluent in the nation, aggregating jobs and income.

Between 2001 and 2009 the regional economy grew more than 25%, outperforming all other major regions in the nation by at least four percentage points. Gross Regional Product per capita is \$68,212, second only to that of the San Francisco region. Greater Washington is the fifth largest regional economy in the nation with a 2010 Gross Regional Product of \$436 billion. The fastest growing private sector job category in the region has been "professional and business services" for which post-secondary education is almost always required and advanced professional degrees are common. These constitute the bulk of the jobs in the defense, security, aerospace and information technology industries. The region's foreign-born workforce is also the most highly educated among major U.S. metropolitan regions, with nearly 42% having a bachelor's degree and nearly 20% with a graduate or professional degree. Exports grew by 50% between 2004 and 2009 to more than \$1.4 billion, targeting strong European markets and with growth occurring in the Middle East and South America.

However, many regional assets remain underleveraged. Per research dollar, the region's universities on average generate lower levels of licensing revenue and start fewer new companies than the strongest performers nationally. This is at least partially because their research strengths are in areas other than the specific fields of engineering and science that traditionally have produced the highest university entrepreneurship rates.

The region will also have to adjust to changing economic conditions; federal contracting is not expected to experience significant growth during the coming years. To create a broad base of new opportunity, consideration must be given to sectors beyond homeland security, such as the broader defense and intelligence cluster, energy, sustainability, and health. This diversification is especially important now that the federal government is ending its long period of rapid expansion. Improvements also may be needed in technology transfer performance at the region's research institutions to support a greater climate for entrepreneurship and export-focused industry growth. Nevertheless, the region

has the talent base and the investment capacity to fuel the transition that will be necessary as federal procurement declines.

While these regional average economic growth rates are spectacular, they mask economic disparities, which are highly correlated with demographics and geography. Pockets of concentrated poverty and unemployment still persist within a few miles of some of the strongest areas of economic growth. Citizens of Wards 8 and 7, those closest to the Saint Elizabeths campus, are predominantly African American. Unemployment rates in these communities have been far higher than national and regional averages for many years. Investments at and near St. Elizabeths – including the redevelopment of the East Campus and the establishment of an innovation hub – create an unprecedented opportunity to change this situation.

The hub is uniquely positioned to catalyze economic growth and address the unmet need in the region for a place where research and innovations can be developed and shared in a ‘marketplace’ of ideas and products, which can attract further investment and spur an innovation ecosystem and revitalization East of the River. The clustering of research, technology transfer and commercial activities, linked through tailored programs, will help increase entrepreneurial activity, venture capital investment and workforce development, providing a model for public-private and philanthropic partnerships. In addition, the employees of anchors and tenants on both the East and West Campus, along with the existing untapped demand of residents, will support improved retail amenities and services. The Campuses have the potential to support a range of businesses and jobs, including direct technology-based opportunities, as well as those in supporting sectors such as building maintenance, landscaping and office supply.

The redevelopment of the East Campus is also significant when viewed in the context of a portfolio of public and private investments into infrastructure as well as commercial, housing and retail uses in Ward 8. Taken together, these initiatives have the potential to dramatically change economic outcomes in neighborhoods East of the River and reverse decades of decline. The District recognizes that this site presents a once-in-a-generation opportunity to transform a historic landmark into a vibrant neighborhood center that showcases the District’s emerging innovation economy.

Given this confluence of factors – a unique historic asset under the District’s jurisdiction where there is potential to grow an innovation supply-chain cluster, along with the unprecedented level of investments occurring East of the River and the potential for new approaches and partnerships – strategic actions, (such as around employment and business incubation) have the potential to provide significant solutions to improving socioeconomic outcomes in Ward 8. These actions, if successful, could then be replicated elsewhere in the District.

Campus Planning & Development Activities

The Saint Elizabeths East Campus comprises one half of the former mental health hospital established by the United States Congress in the 1850s. The 180-acre East Campus was transferred to the District in 1987 as part of the deregulation of mental healthcare. In April 2010, a new hospital opened on the campus to continue serving local patients and federal inmates with mental health issues, leaving a total of 27 historic buildings on the East Campus. The 2008 Council-approved East Campus Redevelopment Framework Plan outlined a broad vision for revitalizing the East Campus as a mixed use, transit ori-

ented development and connecting the campus to the surrounding Congress Heights community. The plan envisions historic buildings being adaptively reused by institutional or office tenants.

The 2012 Saint Elizabeths East Campus Master Plan creates the framework for a community hub within the Congress Heights neighborhood, while promoting the District's emerging innovation economy through redevelopment. Its recommendations for residential, commercial, cultural and institutional uses aim to bring renewed vibrancy and economic opportunity to the East Campus and to surrounding areas, Ward 8 and the city of Washington. The East Campus will eventually accommodate 4.8 million square feet of mixed-use development and be the home of a comprehensive innovation hub.

The District is moving forward with development of the East Campus, with \$113.5 million approved through FY 2016 for infrastructure improvements, so that the District may begin the physical preparation work to allow for a mixed-use development that will include retail, residential, educational and commercial uses, and ultimately support an innovation environment. The recent designation of the East Campus as part of the District's Central Employment Area (CEA) will support these development efforts; the decision by the General Services Administration (GSA) encourages federal agencies to consider these areas as priority locations when considering expansion or relocation.

Adjacent to the East Campus, the West Campus was also the site the former mental health hospital. In 2004, the General Services Administration assumed control of the West Campus for use as a future federal government facility. Saint Elizabeth's large size, its central regional location, proximity to downtown and closed-off campus led the US Department of Homeland Security and GSA to select the West Campus as the new DHS headquarters. The plans for the West Campus include DHS components, such as the National Operations Center, Customs and Border Patrol, and the US Coast Guard, which are being relocated from sites across the region. Through the consolidation, DHS aims to facilitate communication, coordination, and cooperation across the Department, and achieve operational efficiency. Master Planning, transportation planning and an environmental review process have been underway since 2005. Construction of the first new building on the West Campus, the US Coast Guard Headquarters, will be completed in 2013.

DC Innovation Strategy – Purpose and Approach

Spurred by the decision of the federal government to consolidate the Department of Homeland Security (DHS) on the West Campus of St. Elizabeths, the District identified a significant opportunity to capitalize on the consolidation as a means to stimulating local economic development in Ward 8 and grow the city's innovation sector.

The consolidation of DHS and the relocation of 14,000 employees were intended to create a unified headquarters campus, with many critical homeland security functions and activities centralized at Saint Elizabeths. The East Campus was viewed as an opportunity for less secure functions to locate in proximity to DHS, such as job training, certain product testing and commercialization, and university programs focused on the homeland security sector. The East Campus would also be a key location for contractors wanting proximate location to DHS.

With support from the U.S. Commerce Department's Economic Development Administration, the District investigated the potential for an innovation cluster, researching the opportunity for an innovation hub physically located at Saint Elizabeths East as well as innovation programs connecting the hub to assets in Ward 8 and the District. The transformation of the East Campus was viewed as having the potential to –

- Create a range of jobs and business development opportunities tied to the technology and national security sectors.
- Link District residents to jobs, business and education opportunities through pathways to employment, training and entrepreneurship.
- Attract private sector investment to support business and job expansion.
- Develop an education and training hub that equips residents with the skills to access the innovation economy.
- Position the District at the center of a new regional innovation cluster that takes advantage of direct transit access at the campus.
- Act as a model for national security, innovative approaches in research and development, incubation, commercialization as well as for regional collaboration and community growth.
- Support neighborhood revitalization, with improved retail and other amenities on the East Campus and in Congress Heights.

A key focus of the study was identifying the hub components and bridging strategies that would link local businesses and residents to innovation-related procurement, research, education and employment opportunities. The final strategy is intended to provide a framework that will guide the District and private, nonprofit, public partners in moving forward with an innovation hub at Saint Elizabeths and a strengthened innovation cluster in the District.

The District, with researchers and practitioners from Virginia Tech University and Carnegie Mellon, undertook this assessment over a two-year period, under the following tasks –

- **Task 1: Asset and Opportunity Analysis**

The team developed a baseline understanding of the homeland security economy in terms of employment, education and research, commercialization, contracting and procurement activity. The team assessed the ability of the District and Ward 8 to access employment and business opportunities, taking into account their competitive position in the regional innovation economy as well as existing programs and assets.

- **Task 2: Blueprint for an innovation hub and cluster**

The team developed a blueprint for an innovation hub, centered at the Saint Elizabeths East campus. The team also conducted a targeted case study analysis of innovation clusters in order to identify successful and efficient approaches that could be replicated. The case study research informed the blueprint and Task 3's opportunities.

- **Task 3: Screen Opportunities and Assess Implementation**

Based on the research, data analysis and stakeholder feedback, the team identified the physical and programmatic approaches/strategies most appropriate for creating a locally-embedded innovation cluster, which is anchored by the federal government. Strategies were grouped in the following strategies: innovation marketplace, community economic empowerment and talent development. The team screened strategies with stakeholders in order to identify priority strategies, phasing, pilot projects, resources and implementing entities.

- **Task 4: Local Innovation Strategy**

Using information gathered, analyzed and assessed during Tasks 1-3, the team developed an implementation strategy that would support an innovation hub at Saint Elizabeths East and programmatic approaches for Ward 8 and the District to link to the innovation economy. The final report included these approaches as well as a summary of the research and information analyzed during the study.

Tasks 1 – 4: Stakeholder Engagement

The team undertook a strategic approach to stakeholder engagement, clustering engagement at specific value-added points in the research process such as share key findings and/or obtaining input that would inform the research and strategies. For example, as part of Task 1 the team held roundtable discussions with business development, workforce development and education providers operating in Ward 8 and/or operating relevant programs in other wards in order to understand existing assets, opportunities and challenges in connecting to the homeland security economy. A similar set of focus group discussions were with contractors, venture capitalists, commercialization entities and institutions of higher education. The DC Innovation Strategy was featured at the Mayor's 2011 Ward 8 Community Summit where participants polled preferences for innovation-related programs/facilities. For Task 3, the team screened strategies with various entities, including local government agencies, the Mayor's Advisory Board for the Saint Elizabeths Redevelopment Initiative (SERI). In addition, a large strategy work session was held in Ward 8 with business development, workforce development and education providers in order to identify priority strategies, pilot projects, resources, and partners.

The DC Innovation Strategy proceeded in parallel with a collaborative regional effort led by Carnegie Mellon University, which was also funded by the Economic Development Administration. The Carnegie Mellon team worked with federal agencies, local governments and a variety of private-sector organizations throughout the National Capital Region. The goal of this work was to identify how the growth of the homeland security cluster and the larger regional asset base could contribute to the economic revitalization of communities –near Saint Elizabeths (particularly in the District and Prince George's County, MD) – in order to provide benefits for residents and local businesses.

Both efforts were completed in September 2012 and, together, support an enhanced regional innovation cluster centered in Ward 8, which builds a broad supply chain, promotes local entrepreneurship, links residents to employment, promotes innovation-related education pathways and research, and leads to economic transformation and improved outcomes in the city.

Providing a Framework: Case Study Analysis

A case study analysis of other targeted urban redevelopment strategies examined the extent to which other regions are proactively leveraging anchor institutions in order to develop innovation hubs or economic clusters. Nine innovation hubs that leverage the investments of anchor institutions such as universities, federal government agencies, and military installations were investigated. The analysis also identified successful and efficient implementation approaches that could be replicated. Although each region has developed programs and initiatives aimed at building a regional innovation system or cluster (RIC), only a few regions have meaningfully connected with their neighboring communities. The case studies highlight the need for a two-pronged approach: building an innovation economy, and embedding this economy in a robust community through workforce, business and education bridging programs.

The case studies illustrate the following overall lessons (details on the case studies are provided in chapter 4 and the appendix):

- Many regions are proactively supporting the development of an innovation economy by providing space for innovative companies and initiatives that create networks and cooperation between public and private partners.
- Some regions support commercialization and technology transfer through proof-of-concept programs and other joint research efforts.
- Regions with a large federal presence have also developed funding programs that help bring together the private sector with government research labs.
- Some regions are also proactively engaged in building and improving the community economy. These efforts include investments in urban revitalization and the creation of physical and social assets from which the community can draw.
- Some anchor institutions and supporting organizations specifically target minority and women-owned businesses by providing funding and training. Such support helps these businesses with becoming established or their efforts to expand.
- Innovative approaches to link the innovation and community economies include education, workforce development, and other programs that provide economic opportunities to the community's residents.
- Workforce and education programs can also provide the 'open door' for local residents to learn more about the activities of the anchor institution generally.
- Ultimately, the success of building an innovation hub depends on the ability of the region to leverage significant public and private funding. In many cases, a significant amount of public funding was needed to launch the initiatives and programs.

3. Situational Analysis: Assets and Opportunities

Overview

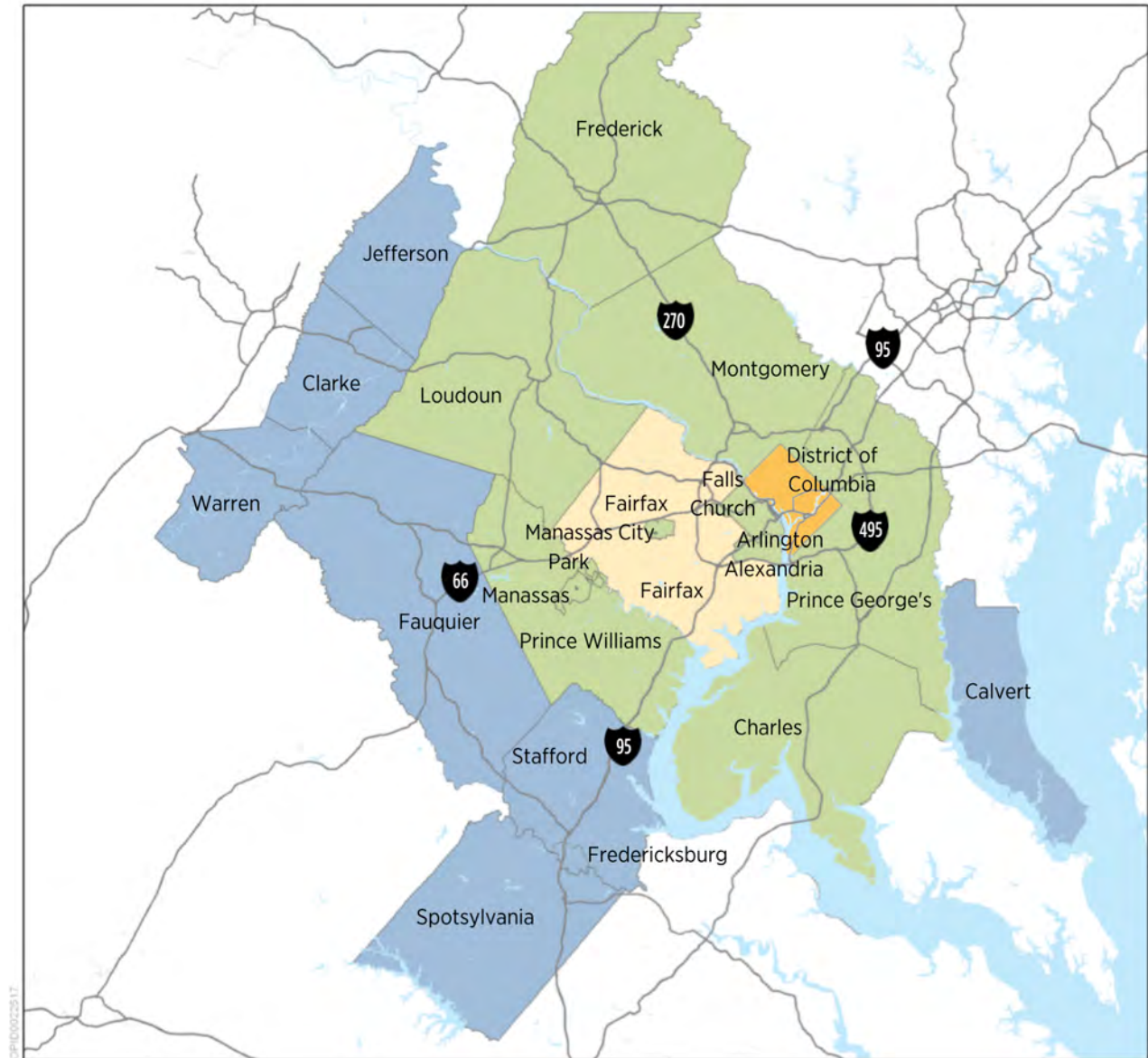
The District of Columbia sits at the center of a robust regional innovation economy, with strengths in the national security, defense and intelligence industries. DHS's presence in the region and the consolidation of operations on the Saint Elizabeths West Campus suggests the potential for DHS and this security cluster to emerge as a driver in DC, promoting innovation and stimulating local economic development. Such a driver is often referred to as an 'anchor institution': a large organization that has strong ties and deep roots in its region and plays a strong role in its regional economy. These large institutions often attract and do business with firms across the country and the world, while also procuring goods and services from local firms and employing and/or training thousands of employees in the local workforce. In essence, these institutions are the 'anchors' of their respective communities.

The attraction of federal tenants to the St. Elizabeths West Campus presents an opportunity to explore the potential for the security cluster to serve as an anchor in the District of Columbia and Ward 8. A critical component of this study is to identify opportunities to link local businesses and residents in the historically underserved neighborhoods surrounding the Saint Elizabeths East Campus to procurement, employment and educational associated with the security cluster. The chapter assesses the homeland security economy, and the economic assets and opportunities in the District and Ward 8 that an innovation hub at the St. Elizabeths East Campus could leverage. Specifically, this research analyzes DHS procurement, employment, research and education activities, as well as DC and Ward 8 economic conditions, focusing on the overlaps with DHS and supporting sectors and a discussion of existing regional assets that provide important resources for supporting innovation hub functions. While the future consolidation of DHS and its employees at Saint Elizabeths will provide significant opportunities, jobs and business opportunities in supporting sectors and industries will also be key in terms of accelerating economic development in Ward 8.

3.1 District of Columbia Regional Profile

Washington, DC is the core of a metropolitan area that encompasses 22 jurisdictions in Maryland, Virginia and West Virginia. The regional population in 2010 was estimated at approximately 5.4 million residents, with approximately 600,000 in the District, 2.3 million in Maryland, and 2.7 million in Virginia. Business districts are spread throughout the region as well, although the jurisdictions directly adjacent to DC (Fairfax and Arlington Counties and Alexandria City in Virginia, and Montgomery and Prince George's Counties in Maryland) account for approximately 70% of residents and 80% of jobs.

Figure 3A: Map of Washington DC Metropolitan Statistical Area (MSA)



Source: US Census Bureau

As the seat of the federal government, the District of Columbia is a major regional employment hub and economic engine, accounting for only 10% of the region's population but over 20% of the region's jobs. The majority of the region's federal government jobs are located within the District itself, as are large portions of the region's jobs in education, professional and technical services and information sectors. One of the major drivers of growth in the District and in the Washington metropolitan statistical area is procurement by the federal government. Over the past 25 years, a shift occurred towards increased contracting of the federal government with the private sector. As a result, the region's economic base is heavily concentrated in sectors related to the federal government, and among these are the defense, intelligence and the homeland security industry.

Employment data highlight the importance of government and professional services to the District's economy. Overall, the Washington metropolitan area has twice as many jobs in professional, scientific and technical services sectors as the United States as a whole. A similar pattern holds for educational services and government employment, with the federal government accounting for nearly a quarter of all jobs in the District of Columbia. With less reliance on sectors that are shrinking nationally (such as manufacturing) and large concentrations in employment in growing sectors (such as professional services), employment in the region and in the District has grown more quickly than in the United States as a whole (see Table 3A).

Table 3A: Employment in selected industry sectors, DC MSA, DC, and USA, 2010

	2010 employment		% of DC MSA jobs in DC	% of total employment			% change 05-10		
	DC MSA	DC		USA	DC MSA	DC	USA	DC MSA	DC
Total employment	3,861,148	825,469	21%	100%	100%	100%	1%	4%	6%
Construction	179,372	13,295	7%	5%	5%	2%	-19%	-2%	**
Manufacturing	57,748	1,769	3%	7%	1%	<1%	-17%	**	-29%
Retail trade	277,922	21,745	8%	10%	7%	3%	-5%	-13%	5%
Information	96,055	21,091	22%	2%	2%	3%	-10%	-15%	-16%
Professional, scientific, technical	591,356	124,633	21%	7%	15%	15%	7%	12%	4%
Administrative and waste services	236,035	47,794	20%	6%	6%	6%	1%	2%	<1%
Educational services	118,988	52,453	44%	2%	3%	6%	16%	16%	10%
Health care and social assistance	305,036	64,651	21%	11%	8%	8%	13%	16%	14%
Government/ gov't enterprises	777,577	268,587	35%	14%	20%	33%	4%	7%	6%
Federal, civilian	398,067	208,814	52%	2%	10%	25%	9%	11 %	9%
Military	72,191	19,756	27%	1%	2%	2%	4%	-6 %	-13%
State and local gov't	307,319	40,017	13%	11%	8%	5%	3%	6%	1%

Source: BEA, Local Area Personal Income and Employment, CA25

Note: **= data not disclosed

While the District remains an important center of employment in the region, employment in many sectors is growing more quickly in the metropolitan area than within the District itself (see right columns, Table 3A). This suggests that, while the District is growing, much of the region's growth is occurring in suburban jurisdictions in Maryland and Virginia.

3.2 Community Economy: Profile of neighborhoods near St. Elizabeths

The area surrounding Saint Elizabeths includes the neighborhoods of Congress Heights, Barry Farm, Bellevue, Buena Vista, Douglass and Anacostia. Nearly 95 percent of all Ward 8 residents are African American. Although the Ward has experienced decline and distress, the assets and socio-economic characteristics of these communities suggest opportunities for local business and residents to connect with new development at the St Es campus. In addition, recent public and private investments have supported significant new amenities, including residential and retail options as well as improved schools, libraries and transportation infrastructure, positioning the ward favorably for business and employment growth, attraction of capital and overall economic development.

The community surrounding Saint Elizabeths has faced persistent socio-economic challenges, which have contributed to persistent levels of distress. Neighborhoods in wards 7 and 8 have comparatively higher rates of poverty and unemployment than other parts of the city and the metropolitan area (see Table 3B). Similarly, median incomes and educational attainment rates are lower than the city average, with only 13.8% of residents holding a bachelors degree or higher, compared to 47.2% citywide.

Table 3B: Selected demographic characteristics, Washington DC MSA, DC, and Wards 7 and 8

	MSA	DC	Wards 7 and 8
Population	5,332,297	588,433	143,649
Employment Status			
Civilian labor force	2,978,188	321,466	60,488
Employed	2,818,975	291,830	49,447
Percent unemployed	5.3%	9.2%*	18.3%
Average Income and Benefits			
Average	\$108,302	\$90,580	\$43,480
Median	\$84,424	\$56,519	\$32,898
Educational Attainment			
High school diploma or higher	89.6%	85.5%	79.9%
Bachelor's degree or higher	46.7%	47.2%	13.8%

Source: US Census Bureau, ACS This table uses the 2005-2009 5-year estimates option, in order to get the most accurate figures for the Ward 7-8 data. The data for PUMA area 00104 approximates the boundaries of Ward 7 and 8, and is the most targeted data available from public statistical sources

* The most recent estimate of the District's unemployment rate is 8.7% (BLS, September 2012)

Despite lower educational attainment levels than the region as a whole, over 14,500 residents of wards 7 and 8 have an Associate's degree or higher, including 5% with advanced degrees. Over 7,000 residents in Wards 7 and 8 are enrolled in college or graduate school. Nearly a quarter of ward 7 and 8 residents (18,910 residents) have some college credit but no degree, representing a large group who either have occupation-specific credentials but no degree, or who could return to school to finish their degree. Similarly, nearly 12,000 high school students in wards 7 and 8 represent a 'pipeline' of future workers who will benefit from workforce training programs or higher education. In contrast to the wards' more educated residents, more than 17,000 residents do not have a high school diploma, and over 34,000 residents have only high school education and no college credit. Many of these residents will require additional education or training in order to achieve the qualifications necessary for employment in the specialized occupations that are common to DHS and professional services firms in Washington DC (see section 3.8).

East of the River also boasts a substantial and growing concentration of human capital. Over half of Ward 7 and 8 residents work in management, professional and office occupations (although a lesser proportion of Ward 7 and 8 residents work in management and professional occupations than in the region as a whole). In addition, many ward residents work in industry sectors that are growing regionally and align with the DHS economy (see section 3.8), with nearly 8,000 workers in the professional and administrative service sectors, and nearly 12,000 in the educational and health services sector (see table 3C).

**Table 3C: Ward 7 and 8 Resident employment by occupation and industry
(ACS 5-year average)**

OCCUPATION		
Civilian employed population 16 years and over	49,447	49,447
Management, professional, and related occupations	14,978	30.3%
Service occupations	12,697	25.7%
Sales and office occupations	14,288	28.9%
Construction, extraction, maintenance, and repair occupations	2,803	5.7%
Production, transportation, and material moving occupations	4,609	9.3%
INDUSTRY		
Civilian employed population 16 years and over	49,447	49,447
Construction	1,791	3.6%
Manufacturing	760	1.5%
Retail trade	3,942	8.0%
Transportation and warehousing, and utilities	3,119	6.3%
Information	1,478	3.0%
Finance and insurance, and real estate and rental and leasing	2,732	5.5%
Professional, scientific, and management, and administrative services	7,780	15.7%
Educational services, and health care and social assistance	11,773	23.8%
Arts, entertainment, and recreation, and accommodation and food services	4,157	8.4%
Other services, except public administration	2,662	5.4%

Source: US Census Bureau, ACS, 2005-2009 5-year estimates

In addition to their human capital, neighborhoods surrounding the East Campus have key assets that provide links to the innovation economy, and the St. Elizabeths campus can build on these assets to create a successful ‘innovation hub.’ The area is connected to downtown DC both by Metrorail stations at Anacostia and Congress Heights and a number of highway and bridge access points. The Saint Elizabeths East Campus is near I-295 and is in close proximity to freight rail infrastructure. In addition to a central location, the scale of the redevelopment potential of the East Campus site provides a unique opportunity within the region. The East Campus has the potential to become a significant business and jobs center for the Ward and District, with the redevelopment of this large historic asset accommodating approximately five million square feet of mixed-use development, including an innovation-cluster supply chain (see chapter 4).

The redevelopment of the St Elizabeths East Campus coincides with unprecedented levels of public and private investments in Ward 8 that support the community economy, particularly in terms of education, workforce development, and support infrastructure. These include substantial investments in school modernization, with a new Anacostia High School, more than \$100 million slated for construction at Ballou High School, several middle schools targeted for modernization (including Johnson, Kramer and Hart), and \$109 million designated for Ward 8 elementary school modernization.

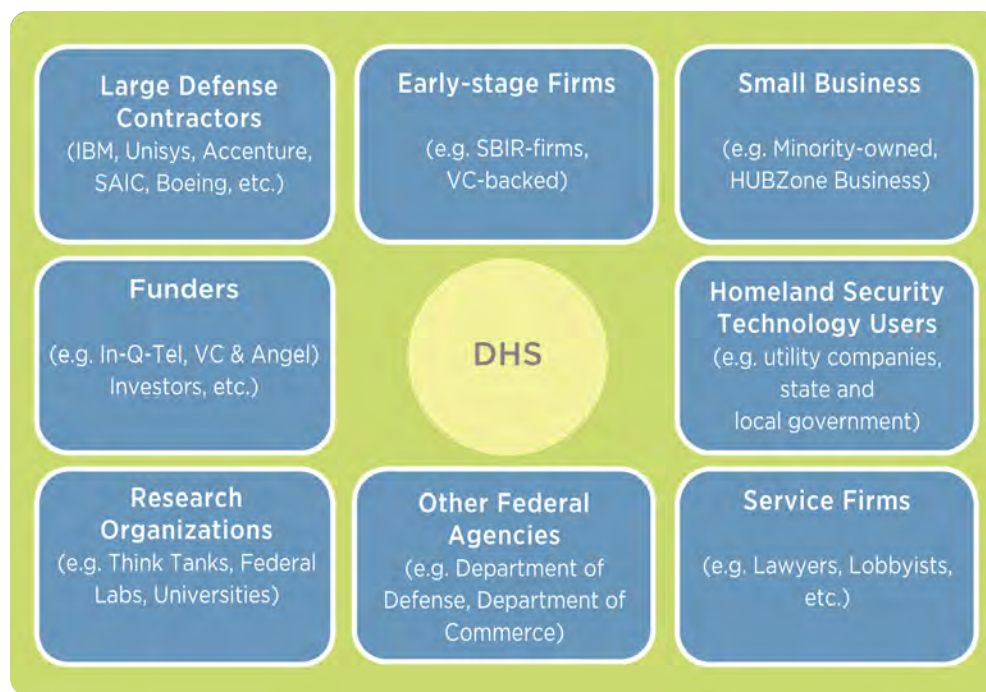
Investments in workforce development, through the District’s One City One Hire program, seek to place 10,000 residents into jobs; to-date, 30% of these placements are East of the River residents. Improved amenities include the retail development at Camp Simms, new housing at Sheridan Station and Matthews Memorial Terrace, two new libraries at Anacostia and Washington Highlands, and a new recreation center at Barry Farm. Significant investments in transportation include the reconstruction of the 11th Street Bridge and a new Circulator route in operation. These investments are improving quality of life in Ward 8, which is proving attractive to an increasing base of professionals and entrepreneurs, who in turn are supporting new retail, shared office space and amenities.

3.3 Role of Anchor Institution in the Economy

DHS' strong presence in the DC region and the consolidation of operations on the Saint Elizabeths West Campus suggests the potential for DHS to emerge as an economic driver in the District of Columbia. Such an entity is often referred to as an 'anchor institution': a large organization that has strong ties and deep roots in its region and plays a strong role in its regional economy. These large institutions often attract and do business with firms across the country and the world, while also procuring goods and services from local firms and employing and/or training thousands of employees in the local workforce. In essence, these institutions are the 'anchors' of their respective communities (Initiative for a Competitive Inner City, 2010).

The homeland security cluster is part of the much larger defense, intelligence and security industry cluster in the Washington D.C. metropolitan area. The region hosts federal agencies such as the Department of Defense and the Department of Homeland Security, as well as several related federal research laboratories and funding organizations. The presence of the federal sector is reinforced by a network of private defense, intelligence and security companies that benefit from close geographic proximity to federal agencies and laboratories. These private firms include large contractors, as well as early-stage firms and small businesses that provide an array of services to Federal agencies. Figure 3B illustrates the many organizations with relationships in the DHS economy. The attraction of federal tenants to the St. Elizabeths West Campus presents an opportunity to explore the potential for DHS to serve as an anchor institution in the District of Columbia and in Ward 8.

Figure 3B: Organizations and Firms with Relationships to DHS



3.4 Innovation economy: homeland security

The Department of Homeland Security's mission is to protect the United States by securing its borders, preventing and deterring terrorist attacks, and protecting against and responding to threats and hazards

to the nation. A large and diverse array of jobs and business opportunities has grown around the ‘homeland security economy’ since 2001. This economy centers on the Department of Homeland Security, which employs more than 220,000 people across the United States, with about 27,000 employees in the DC region. The economic impact of DHS in the national economy is substantial, including the additional employment within contractor firms, service firms, and other private businesses that serve DHS. For example, DHS spent 26.1% of the agency’s enacted budget to procure products and services from the private sector in 2009. This spending on homeland security products and services has significantly increased in recent years: between 2002 and 2004, federal agencies spent on average about \$5.2 billion a year (Mayer & Zalneraitis, 2005). Between 2005 and 2010, DHS increased spending substantially averaging \$13.9 billion per year, for a total of more than \$83.3 billion in contracting activity (see Table 3D).

Table 3D: Ranking of homeland security procurement by MSA, 2005-2010

Rank	Place of Performance MSA	Total HS Procurement, 2005-2010	% of Total Procurement
1	Washington-Arlington-Alexandria, DC-VA-MD-WV MSA	\$37,039,015,153	44.4%
2	Baton Rouge, LA MSA	\$2,713,147,452	3.3%
3	Dallas-Fort Worth-Arlington, TX MSA	\$2,127,705,801	2.6%
4	San Francisco-Oakland-Fremont, CA MSA	\$1,656,055,249	2.0%
5	New Orleans-Metairie-Kenner, LA MSA	\$1,422,915,768	1.7%
6	New York-Northern New Jersey-Long Island, NY-NJ-PA MSA	\$1,347,403,112	1.6%
7	Phoenix-Mesa-Glendale, AZ MSA	\$1,199,465,635	1.4%
8	Los Angeles-Long Beach-Santa Ana, CA MSA	\$1,143,022,791	1.4%
9	Virginia Beach-Norfolk-Newport News, VA-NC MSA	\$1,135,095,057	1.4%
10	Boston-Cambridge-Quincy, MA-NH MSA	\$1,083,389,122	1.3%
Total procurement in top 25 metropolitan statistical areas		\$61,264,211,546	73.5%
Total procurement in remaining metropolitan areas		\$14,753,654,620	17.7%
Total procurement in international & unidentified metropolitan areas		\$7,334,108,585	8.8%
Total procurement in homeland security		\$83,351,974,751	

Source: Federal Procurement Data System (FDPS)

The private sector firms serving DHS’ procurement needs concentrate in a few regions in the United States, and the Washington D.C. metropolitan area accounts for the highest concentration of firms and organizations that develop homeland security products and services. Table 3D ranks total homeland security procurement by metropolitan statistical areas for the period between 2005 and 2010. The analysis indicates that the Washington D.C. metropolitan statistical area captured 44.4% of total homeland security procurement during the period 2005 to 2010. D.C.’s homeland security economy consists primarily of large private sector firms that contract with government. These firms have long-standing contractual relationships with Federal agencies, often building on expertise developed through working with the Department of Defense.

Although many serve national or international markets, firms tend to concentrate important business functions and units in the Washington D.C. region, with clusters in Northern Virginia (Fairfax and Arlington County) and in the District of Columbia. Apart from these large firms, a range of small, technology-based firms have benefitted from the homeland security economy through investments in their innovative capabilities (see section 3.6.). These firms are distributed across the United States, with con-

centrations in California and Massachusetts. In the Washington D.C. region, these firms tend to locate in Northern Virginia. A range of small firms (including minority-owned firms) benefit from procurement contracts with agencies like DHS for services not related to innovation or new technology. The DC region has several other assets that support the homeland security economy indirectly, including venture capitalists, research organizations, other federal agencies, as well as service firms such as policy analysts, lawyers, etc. These organizations tend to cluster in the District of Columbia.

3.5 Homeland security procurement in the Washington DC region

Within the Washington DC metropolitan statistical area (MSA), the District of Columbia is the most important location for private sector government contractors. Total homeland security procurement in the District amounted to more than \$15.5 billion from 2005 to 2010 (see Table 3E). The District of Columbia received more homeland security procurement than any other jurisdiction within the Washington DC metropolitan region. Moreover, the District's share of total homeland security procurement in the nation increased from 30% in 2005 to almost 42% in 2010, indicating increasing concentration of homeland security activity in the nation's capital. From 2005 to 2010, procurement in the District grew by 14.1% per year, compared to 8.3% for the Washington DC MSA as a whole, and a decrease of 2.3% for the United States as a whole.

Table 3E: Homeland security procurement in the Washington D.C. MSA, 2005 to 2010

	Total DHS procurement, 2005	Total DHS procurement, 2010	Total DHS procurement, 2005-2010	Average growth rate, 2005-2010
District of Columbia	\$6,528,806,419	\$2,737,831,641	\$15,542,450,388	14.1%
Washington-Arlington-Alexandria MSA	\$4,042,351,142	\$1,239,226,355	\$37,039,015,153	8.3%
United States	\$14,610,415,926	\$12,705,947,590	\$83,351,974,751	-2.3%

Source: FDPS

Firms in the District specialize in high-tech products and services such as consulting services, custom computer programming services, engineering services, architectural services and computer systems design services. Between 2005 and 2010, DC captured the largest share of high-tech procurement in the region (42.6%, \$7 billion), followed by Arlington County (25.3%) and Fairfax County (19.7%).

Top DHS contractors

The top District-based contractors are large firms that specialize in systems integration and solutions. Typical areas in which firms specialize are: IT services, cyber security, communications systems, border management and security, infrastructure protection, emergency preparedness, contingency operation, and transportation security. Table 3F lists the top 25 contractors in the District of Columbia. These rankings and the associated dollar figures represent procurement contracts in which these firms provided the services of the contract in Washington, DC (i.e., DC is the 'place of performance' for the contract). Firms themselves may be headquartered in other locations.

Table 3F: Top 25 contractors receiving DHS procurement contracts to provide services in the District of Columbia, 2010

Rank	Company	Total DHS Procurement in DC, 2010	Total DHS Procurement Nationwide, 2010	Portion of Procurement in DC, 2010
1	INTERNATIONAL BUSINESS MACHINES CORP. (IBM)	\$217,983,119	\$297,829,406	73.2%
2	SCIENCE APPLICATIONS INTERNATIONAL CORP. (SAIC)	\$157,983,228	\$326,702,795	48.4%
3	COMPUTER SCIENCES CORPORATION	\$131,010,722	\$272,240,379	48.1%
4	INTERNATIONAL BUSINESS MACHINE	\$95,260,143	\$257,291,714	37.0%
5	BOOZ ALLEN HAMILTON INC.	\$84,927,748	\$138,775,141	61.2%
6	STG INTERNATIONAL, INC.	\$69,045,712	\$73,589,542	93.8%
7	BOOZ ALLEN HAMILTON INC	\$67,595,280	\$85,263,442	79.3%
8	COASTAL INTERNATIONAL SECURITY	\$66,099,190	\$75,982,818	87.0%
9	GENERAL DYNAMICS	\$62,168,041	\$109,350,190	56.9%
10	DELL MARKETING LIMITED PARTNERSHIP	\$60,758,005	\$66,708,136	91.1%
11	BAE SYSTEMS INFORMATION TECHNOLOGY INC.	\$53,804,648	\$54,200,594	99.3%
12	LOCKHEED MARTIN SERVICES INC.	\$52,481,609	\$71,570,426	73.3%
13	SRS TECHNOLOGIES	\$36,450,535	\$36,450,535	100.0%
14	NETSTAR-1 GOVERNMENT CONSULTING, INC.	\$33,728,790	\$36,796,068	91.7%
15	COMPUTER ASSOCIATES INTERNATIONAL	\$31,717,318	\$31,912,276	99.4%
16	TOUCHSTONE CONSULTING GROUP INC.	\$31,039,953	\$33,281,865	93.3%
17	URS GROUP INC.	\$30,422,672	\$32,244,131	94.4%
18	PEROT SYSTEMS GOVERNMENT SERVICES, INC.	\$30,312,842	\$31,938,397	94.9%
19	VERIDIAN ENGINEERING	\$24,743,617	\$35,057,984	70.6%
20	GOVPLACE	\$23,192,721	\$99,172,840	23.4%
21	RISK ASSESSMENT, MAPPING, AND PLANNING PARTNERS (RAMP-P)	\$23,073,022	\$54,363,232	42.4%
22	DELOITTE & TOUCHE L.L.P.	\$22,676,350	\$26,673,568	85.0%
23	UNISYS CORPORATION	\$21,131,105	\$296,214,929	7.1%
24	CREATIVE COMPUTING SOLUTIONS INCORPORATED	\$20,508,222	\$36,724,480	55.8%
25	DEFENSE GROUP INCORPORATED	\$20,507,766	\$20,507,766	100.0%

Source: FDPS

These top contractors perform most of their procurement work within DC itself. For example, IBM conducted more than 73% of its total DHS procurement contracts in the District, while SAIC and CSC perform almost half of their work in the District (48.4% and 48.1% respectively). These top homeland security contractors are typically large firms experienced with federal procurement. Firms like SAIC, CSC, and General Dynamics have a history of contracting for the Department of Defense, and face fewer barriers in entering the homeland security market as a result of their long experience in contracting with federal agencies, and large employment base.

Similar to the defense industry, the homeland security industry specializes in the design of systems and solutions. As a result, many defense and homeland security contractors have multiple locations, often co-located with government agencies. For example, SAIC has 25 locations within the District of Columbia,

many of which are co-located with federal agencies. These firms are so-called “systems houses” (Markusen, Hall, Campbell, & Deitrick, 1991, p. 219). Systems houses like IBM, SAIC or CSC specialize in the design and development of defense and homeland security systems to meet the government’s needs, often participating in developing contract requirements specifications. This process involves close interaction between contracting officers, government program managers and firm representatives.

Contracting with small and minority-owned businesses

Each federal agency is required to contract with small businesses, and to offer procurement opportunities for small, minority-owned, women-owned, HUBZone-certified, veteran-owned, and service-disabled veteran-owned businesses. Small businesses can be prime contractors working directly with DHS, or subcontract with larger contractors like IBM or SAIC. Federal agencies generally have established mentoring programs, such as the DHS Mentor-Protégé Program. The District of Columbia is an important location for minority-owned businesses that contract with DHS. From 2005 to 2010, minority-owned businesses earned more than \$11 billion in contracts nationally (14% of total DHS procurement); District-based minority-owned businesses received \$2 billion of this total.

DHS contracting in Ward 8

While the District captures a fair amount of contracting activity among small, minority-owned businesses, Ward 8 businesses have not benefitted in proportion from these activities. Homeland security contractors performed work in Ward 8 in the amount of \$18,013,716, which represents only 0.12% of total homeland security procurement activity in the District of Columbia. Although contracting activity in Ward 8 increased annually by about 22.9% between 2005 and 2010, much of the increase occurred in 2006-08 (see tables 3G and 3H, next page), likely as part of the initiation of construction activities around the new DHS headquarters on the Saint Elizabeths West Campus. Contracting work in Ward 8 was performed in areas related both to high-tech products and services such as Internet services, electronic computer manufacturing, information services, and consulting services, as well as low-tech services such as building construction and security guards and patrol services (see table 3I).

Table 3G: Homeland security procurement in the District of Columbia, Ward 8, Washington-Arlington-Alexandria MSA and the United States, 2005-2010

	2005	2006	2007	2008	2009	2010	Total	Average annual growth rate, 2005-2010
District of Columbia	\$1,239,226,355	\$2,341,924,084	\$2,396,512,092	\$3,534,010,851	\$3,292,945,365	\$2,737,831,641	\$15,542,450,388	14.1%
Ward 8	\$218,649	\$9,446,304	\$2,560,908	\$4,399,918	\$633,331	\$754,606	\$18,013,716	22.9%
Rest of Washington-Arlington-Alexandria MSA	\$2,803,124,787	\$3,053,897,043	\$3,164,870,953	\$4,783,379,997	\$3,900,317,207	\$3,790,974,779	\$21,496,564,765	5.2%
all other MSAs	\$10,568,064,784	\$9,244,993,206	\$6,514,528,055	\$7,312,019,550	\$6,496,212,831	\$6,177,141,171	\$46,312,959,598	-8.6%
DHS \$ total	\$14,610,415,926	\$14,640,814,334	\$12,075,911,100	\$15,629,410,397	\$13,689,475,404	\$12,705,947,590	\$83,351,974,751	-2.3%

Source: FDPS

Table 3H: Procurement in Ward 8 by type of business, 2005 to 2010

	2005	2006	2007	2008	2009	2010	Total, 2005-2010	% of DC Procurement
Emerging small businesses in Ward 8	\$ -	\$119,169	\$ -	\$1,985,262	\$ -	\$ -	\$2,104,431	2.47%
Minority Owned Business in Ward 8	\$ -	\$97,569	\$1,143,054	\$2,917,967	\$122,484	\$398,487	\$4,679,561	0.23%
Women owned in Ward 8	\$8,124	\$7,860	\$916,430	\$792,675	\$122,484	\$394,697	\$2,242,271	0.13%
Black American Owned in Ward 8	\$ -	\$ -	\$910,930	\$792,675	\$122,484	\$382,906	\$2,208,996	0.48%
Hispanic American Owned in Ward 8	\$ -	\$ -	\$ -	\$ -	\$ -	\$11,791	\$11,791	0.00%

Source: FDPS- The FDPS assigns businesses to these categories based on their status as determined by the Small Business Administration, which certifies these businesses for procurement preference purposes. Methodology at:

<http://www.google.ch/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=OCC4QFjAA&url=http%3A%2F%2Fwww.fpdsg.com%2Fdownloads%2FFPDS-Data-Dictionary-Version1.3.pdf&ei=MSk2UOznDazQ4QTD8YG4Bg&usq=AFQjCNFP6tGEY-pS2YoGqYEjObtugk49aQ&cad=rja>

Note: Some businesses qualify for more than one category.

The top 10 vendors performing work in Ward 8 are not located or headquartered in Ward 8. Most of these firms are traditional government contractors, some of which were acquired by large systems integrators such as Computer Sciences Corporation or General Dynamics. These acquisitions lead to more concentration in the industry among system integrators, and potentially to more leakage of DHS-related business opportunities from Ward 8.

Table 3I: Detailed information about top 10 vendors performing work in Ward 8

	Vendor name	Total, 2005-2010	Headquarters location	Other important information
1	DATATRAC INFORMATION SERVICES INC.	\$8,999,398	Richardson, TX	Acquired by Computer Sciences Corporation in 2007
2	MASTER SECURITY COMPANY, LLC	\$2,791,302	Cockeysville, MD	Provides security solutions
3	EXECUTIVE INFORMATION SYSTEMS	\$2,265,955	Bethesda, MD	Supports software developers and manufacturing partners' sales and marketing efforts to government customers
4	2PI SOLUTIONS INC	\$1,985,262	Washington D.C. (5335 Wisconsin Avenue Nw Suite 440)	IT, shredding and recycling services, construction and facilities maintenance
5	BRADLEY TECHNOLOGIES INC.	\$1,922,934	Silver Spring, MD	Security services
6	ANTEON CORPORATION (VA)	\$1,243,842	Fairfax, VA	Now part of General Dynamics
7	DTM CORPORATION	\$684,419	Washington D.C. (7600 Georgia Ave, NW, Suite 316)	Security solutions, facility management and automation resources
8	SRS TECHNOLOGIES	\$359,891	Originally in Newport Beach, CA (now Fairfax, VA)	Acquired by ManTech located in Fairfax, VA in 2007; Provides information technology, and system engineering and integration services and products
9	KARDEX SYSTEMS INC	\$342,098	Zurich, Switzerland	Storage solutions
10	GRANT THORNTON LLP	\$237,685	Chicago, IL with offices in DC	Auditing, management, consulting, etc.

Source: FDPS and various websites.

3.6 Innovation and commercialization in the homeland security economy

Investments in innovation and commercialization help public sector entities and private sector organizations to keep pace with market demands and develop new solutions that add customer value, instead of relying on traditional products and services that are no longer competitive. A successful innovation process requires the participation of a variety of entities that create the conditions for innovation to occur, and provide an environment for entrepreneurs to capitalize on innovative ideas. Many regions with strong traditions of innovation and entrepreneurship have developed organically, but regions can take steps to strengthen the regional capacity for innovators to thrive. Regional stakeholders must develop partnerships, build networks and support intermediary organizations that foster relationships between regional innovators, cultivate existing assets among entrepreneurs, institutions, and public resources, and pursue initiatives that strengthen local capacity by focusing on aligning resources and exploring solutions to gaps and shortcomings (Hartsock, 2011).

The DC region has a number of existing organizations that make strategic investments in innovation and commercialization activities specific to the homeland security economy. For instance, In-Q-Tel is a non-profit strategic investment firm with offices in Arlington and Menlo Park. In-Q-Tel aims to bridge the gap between the technology needs of the Intelligence Community (IC) and advances in commercial technology. In-Q-Tel supports the Central Intelligence Agency (CIA), the National Geospatial-Intelligence Agency (NGA), the Defense Intelligence Agency (DIA), and the Department of Homeland Security (DHS) through investments in innovative technology solutions in the private sector. Since its founding in 1999, In-Q-Tel has invested in more than 150 companies and delivered more than 300 technology solutions to the intelligence community. Most In-Q-Tel Investments were made with California-based companies (29), followed by Massachusetts (12 companies) and Virginia (6 companies). The Virginia-based companies are mostly located in Northern Virginia. In-Q-Tel has not invested in any DC-based companies. In-Q-Tel maintains an interest in networking with the private sector and the academic community.

Similarly, DHS has advanced its role in working with the private sector in recent years, in an effort to promote technology commercialization that supports DHS operational priorities. DHS's Commercialization Office works with companies to develop products and services aligned with the Department's needs. Two programs within the Commercialization Office emphasize the relationship with the private sector. The first program – System Efficacy through Commercialization, Utilization, Relevance and Evaluation (SECURE™) – is designed to leverage the experiences and resources of the private sector to develop fully deployable technology in the near future. The second – FutureTECH – is focused on research and innovation areas of importance to DHS in the long term.

SBIR funding in homeland security

Federal funding for Small Business Innovation Research (SBIR) provides an indicator of the innovation and commercialization potential of the District of Columbia in the homeland security economy. Each federal funding agency with an annual R&D program budget over \$100 million is required to set aside 2.5% of its budget for making research awards to domestic small businesses through a competitive process. The SBIR program provides grants to small firms (generally no larger than 500 employees) for research projects deemed to have strong potential for commercialization relevant to the awarding agency.

The DHS SBIR program was initiated in 2004 and issues two solicitations per year. The top 10 states receiving most DHS SBIR awards are: 1. California, 2. Massachusetts, 3. Virginia, 4. New York, 5. Texas, 6. Washington, 7. Michigan, 8. Arizona, 9. Pennsylvania, and 10. New Mexico. Within the Washington D.C. metropolitan area, 51 companies received DHS SBIR funding. Most awards were made to firms located in Northern Virginia (30 awards) and suburban Maryland (21 awards). A total of 4 DC-based companies responded to DHS SBIR solicitations, but none received an award since the program was established in 2004.

Table 3J: DHS SBIR Phase I and II Awards in the Washington DC MSA, 2004-2010

	Phase I		Phase II		Total	
	Number of Companies	Awards	Number of companies	Awards	Number of Companies	Awards
District of Columbia	0	0	0	0	0	0
Northern Virginia	23	\$2,332,629	7	\$5,247,960	30	\$7,580,588
Suburban Maryland	15	\$1,498,773	6	\$3,969,464	21	\$5,468,237
MSA, Total	38	\$3,831,402	13	\$9,217,424	51	\$13,048,825

Source: DHS SBIR Program

3.7 Commercialization and business development in the DC region

Successful regional economies demonstrate an ability to renew themselves through innovation and commercialization of new technologies, creating more effective products and services and fostering innovation ecosystems that encourage research, development and investment. Although the large market for providing government contracting services has been a boon for the District of Columbia, the nature of the Federal procurement process may inhibit entrepreneurial development related to the homeland security economy. The stringent requirements of procurement contracts compel businesses to focus on compliance and limit their flexibility, and may discourage them from taking risks or devoting time and resources to promising innovations.

Indicators of regional activity in commercialization and business development suggest that Washington DC economy does not have a strong history in innovation or technology commercialization, which may explain the lack of innovative activity in the DHS economy noted in section 3.6. These indicators include data on regional patents, venture capital and small business innovations.

The District of Columbia has not established a technology-based economic development organization that makes targeted investments in local technology firms and technology commercialization initiatives at regional research institutions. Maryland and Virginia both have established agencies that facilitate technology-based economic development. The Virginia Center for Innovative Technology and Maryland's Technology Development Corporation implement a range of programs that fund commercialization and technology transfer, particularly from federal labs to the private sector.

Patenting in the District of Columbia

Patent data provide an indicator of the innovative potential of a regional economy, although patent data do not reflect the entirety of knowledge-generation and innovative activities in a region. As noted above, this may be particularly important for the type of knowledge generation prevalent within Washington DC's economy, including government policy, classified technologies, and other forms of intellectual property protection such as copyrighting. While DC has a relatively constant ratio of patents issued per resident, the rate of growth in the District of Columbia is relatively weak compared to surrounding areas. From 1977 to 2010, the number of registered patents grew by only 1.3% annually. This compares less favorably to neighboring states like Virginia (3.0%) and Maryland (2.2%) and to the nation as a whole (3.7%). Overall the rate of patenting in the District, Virginia and Maryland is significantly below the national rate.

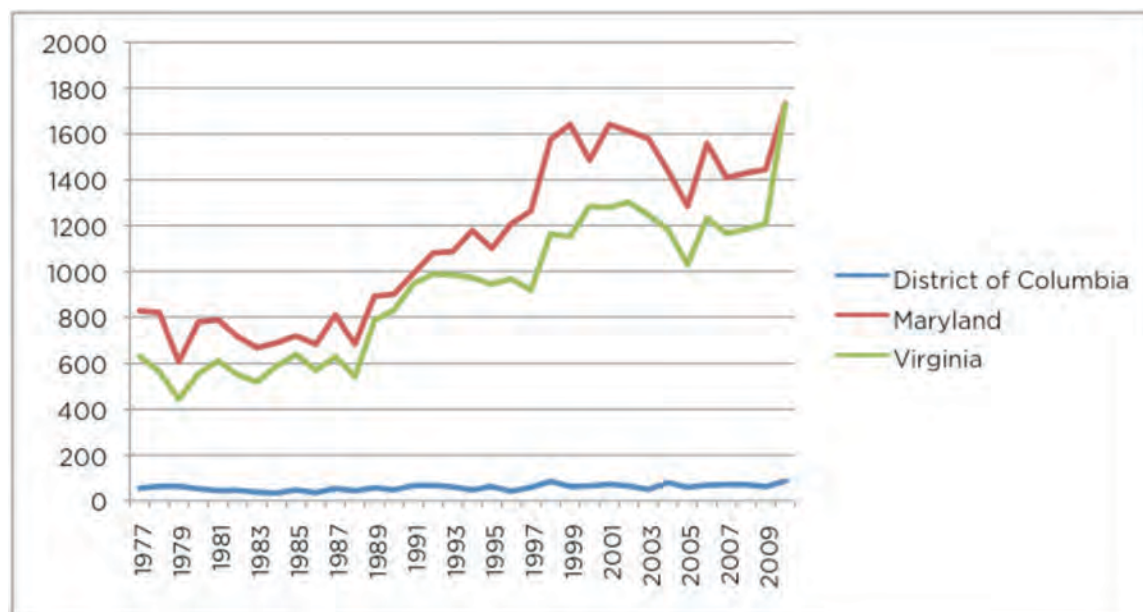
Table 3K: Patent growth for the District and selected other areas, 1977 to 2010

	77-89	90-99	00-10	1977-2010	Average annual growth rate 1977-2010	Patents per 1,000 residents for 2000-2010 Patent Period*
DC	638	604	752	1,994	1.3%	1.3
Maryland	9,689	12,024	16,614	38,327	2.2%	2.1
Virginia	7,636	9,863	13,838	31,337	3.0%	1.3
US	959,366	1,229,421	2,071,559	4,260,346	3.7%	4.0

Source: USPTO

Note: *based on 2009 Census Population Estimates

Patents in the District do not show a strong concentration of patents in certain technology fields, while Maryland and Virginia show strong specializations in technology areas that are critical to prevalent economic sectors in these states (e.g. Virginia in data processing, Maryland in biotechnology).

Figure 3C: Patenting in the District of Columbia, Maryland, and Virginia, 1977-2010


Venture capital investments in the District of Columbia

The amount of venture capital that early stage firms have attracted helps to explain the level of successful entrepreneurial activity in a region. Between 2008 and 2010 a total of \$188,988,100 in venture capital was invested in DC-based companies, representing 0.3% of the total venture capital invested in the United States during that period. DC-based firms secured 7.2% of the \$2.6 billion in venture capital invested in the “DC Metroplex,” which includes nearby metropolitan areas such as Richmond and Baltimore. The DC region received a smaller share of investment than ‘high-tech’ regions such as Silicon Valley, which captured more than 39% of all venture capital investments in the United States between 2008 and 2010. Nonetheless, DC outranks other regions of the US, such as Colorado, and garners nearly as much investment as regions such as Texas or the Midwest states.

Table 3L: Venture capital investments in District of Columbia and US regions, 2008-2010

VC Investments, 2008-2010	Total Amount Invested, 2008-10	% of Total	Average Investment per Deal
District of Columbia	\$188,988,100	0.3%	Not available
DC Metroplex	\$2,720,554,500	3.7%	\$5,468,978
Midwest	\$3,542,530,100	4.8%	\$4,320,159
Silicon Valley	\$28,057,235,800	39.3%	\$8,644,573
Texas	\$3,079,897,700	4.19%	\$6,783,916
Total, United States	\$73,590,747,000	100.0%	\$6,774,440

Source: PriceWaterhouseCoopers MoneyTree Survey

Note: The DC Metroplex covers a much broader area than the Washington-Arlington-Alexandria MSA and includes the Baltimore-Towson, Charlottesville, Richmond-Petersburg MSAs and the Culpeper Micropolitan Statistical Area

The DC-based firms receiving investments operate primarily in knowledge-based service sectors. Specifically, the majority of firms create products and services for consumers, with prominent sectors including digital media and online services, as well as software and telecommunications sectors.

3.8 DHS workforce and employment

The Department of Homeland Security employed nearly 27,000 in the Washington metropolitan area in 2010, with over 17,000 of these jobs within the District of Columbia itself. Table 3M lists the top fifteen occupations for DHS employees working in Washington, DC. The majority of DHS jobs in the Washington metro area are located within Washington DC itself, with particularly high concentrations of management, administrative and security workers in the District. The District has a lower proportion of DHS' regional workforce in information technology and general investigation/ compliance occupations (see occupations # 6 and 7 in table 3M). Although 64% of DHS jobs are located within the District, only 9% of DHS employees are District residents. The vast majority of DHS workers live in Virginia (51%) and Maryland (32%). As of 2010, 32% of DHS jobs in the Washington metro area were in Virginia (DHS Office of Personnel Management, 2010).

DHS typically has several dozen job openings listed on the USAJobs website at any given time. DHS had over 1,000 separations in the DC metro area in FY 2010, leaving job openings in a variety of occupations. In addition, DHS is planning to expand its workforce substantially in the 2009-2012 timeframe, with contracting and information technology specialists as "key occupational areas that will be the focus of hiring in the Washington, D.C. metropolitan area" (Source: Electronic Employment Dashboard).

Table 3M: Department of Homeland Security Employment in Washington, DC and the Washington Metro Area (April, 2010)

Rank (DC only)	OCCUPATION (OPM ID #)	EMPLOYMENT		
		DC	MSA	% of MSA jobs in DC
	TOTAL ALL OCCUPATIONS	17,378	26,965	64%
1	MANAGEMENT AND PROGRAM ANALYSIS (0343)	3,022	4,227	71%
2	MISCELLANEOUS ADMINISTRATION AND PROGRAM (0301)	2,422	3,638	67%
3	CRIMINAL INVESTIGATION (1811)	1,771	1,996	89%
4	POLICE (0083)	1,365	1,433	95%
5	BUSINESS AND INDUSTRY (incl. contracting) (11xx)	943	1,120	84%
6	INSPECTION, INVESTIGATION, ENFORCEMENT, COMPLIANCE (1801)	868	2,469	35%
7	INFORMATION TECHNOLOGY (22xx)	792	1,642	48%
8	LEGAL AND KINDRED (09xx)	731	963	76%
9	SECURITY ADMINISTRATION (0080)	667	808	82%
10	ACCOUNTING AND BUDGET (05xx)	632	903	70%
11	SOCIAL SCIENCE, PSYCHOLOGY, AND WELFARE (01xx)	578	699	83%
12	PERSONNEL MGMT & INDUSTRIAL RELATIONS (02xx)	577	697	83%
13	MISCELLANEOUS CLERK AND ASSISTANT (0303)	382	590	65%
14	ENGINEERING AND ARCHITECTURE (08xx)	294	375	78%
15	BORDER PATROL ENFORCEMENT SERIES (1896)	221	233	95%

Source: US Office of Personnel Management, Fedscope Database

Applicants must meet education and experience requirements to qualify for DHS jobs at a given GS level. In addition to the education requirements for each level (shown in table 3N), these jobs typically carry an experience qualification, requiring the candidate have at least one year of experience at the equivalent of the next lower GS-level. DHS jobs in DC have extensive education and experience requirements, with 93% of jobs at GS-9 or above, requiring advanced degrees or more than eight years of experience related to the particular job opening. In addition to these requirements, the nature of DHS' work often requires that applicants obtain security clearances.

Despite the rigorous qualifications for most DHS jobs in DC, the agency has numerous programs that could help DC residents to secure employment opportunities. For instance, DHS is working to secure direct hiring authority that would allow more flexibility than the traditional competitive hiring process that is open to candidates nationwide. According to DHS, the agency hired 155 DC residents in 2010, including 21 hired for apprentice/trainee level positions (GS 1- GS 5).

Table 3N: DHS Employment in Washington, DC, by GS-level (average, 2010)

GS-level	Qualifying education	Employment	% of total
1	None	5	0.03%
2	High school or equivalent	24	0.13%
3	1 academic year above high school	51	0.29%
4	2 academic years above high school or Associate's degree	156	0.87%
5	4 academic years above high school leading to a bachelor's degree or Bachelor's degree	156	0.87%
6	Same as above, plus experience at lower grade-level	77	0.43%
7	Bachelor's degree with superior academic achievement or 1 academic year of graduate education	426	2.39%
8	Same as above, plus experience at lower grade-level	173	0.97%
9	Master's (or equivalent degree such as LL.B. or J.D.) or 2 academic years of progressive graduate education	837	4.70%
10	Same as above, plus experience at lower grade-level	32	0.18%
11	Ph.D. or equivalent degree or 3 academic years of progressive graduate education (for research positions: completed master's degree)	1,009	5.67%
12	For research positions only, completion of all requirements for a doctoral or equivalent degree	1,475	8.29%
13	Same as above, plus experience at lower grade-level	3,961	22.27%
14	Same as above, plus experience at lower grade-level	4,687	26.36%
15	Same as above, plus experience at lower grade-level	2,645	14.87%
N/A	Alternative pay structures outside GS system	1,920	10.79%
TOTAL		17,785	100%

Source: US Office of Personnel Management, Fedscope Database

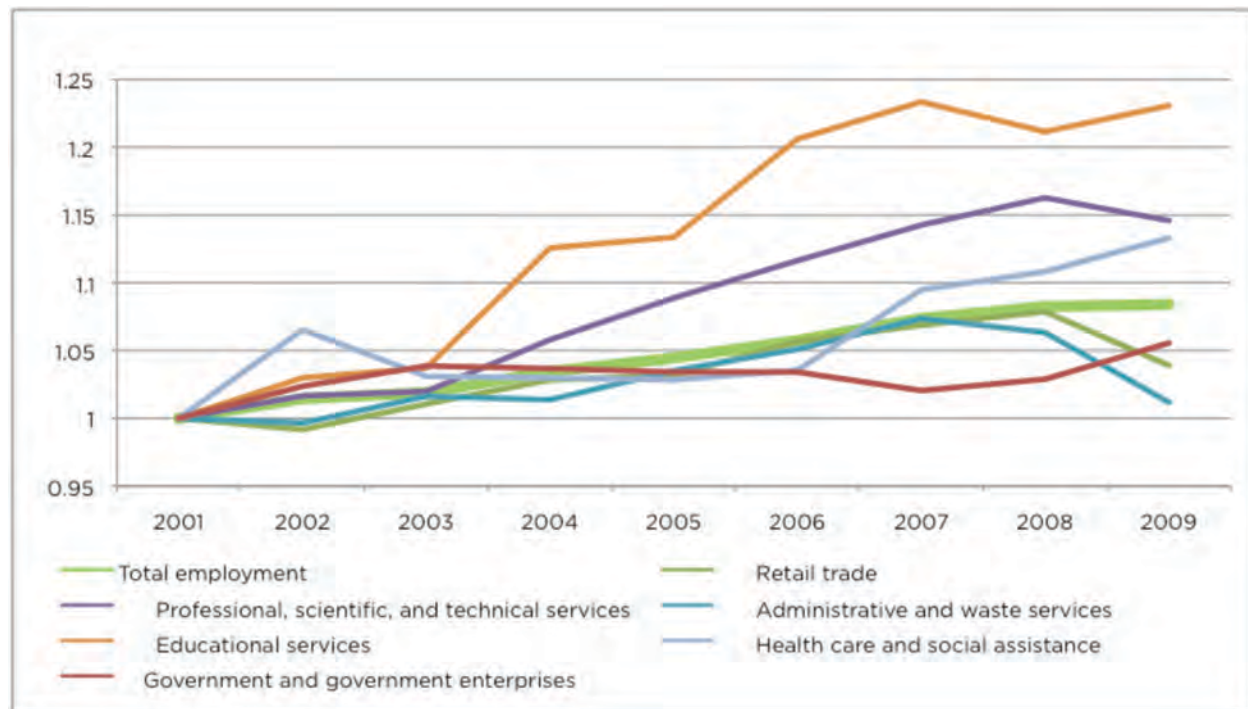
Employment in supporting industry sectors

While the presence of federal tenants and employees at Saint Elizabeths will provide direct opportunities for employment, business and income growth in Ward 8, jobs in supporting sectors and industries such as professional and technical services, education services and administrative service industries provide additional opportunities for local residents. These jobs include entry-level and career pathway positions that can provide new employment opportunities for less skilled workers in Ward 8. In addition, many jobs within the homeland security cluster require similar skills and education to jobs in related sectors; as such, residents trained for employment within the homeland security cluster could apply these skillsets to jobs within other regionally important industry sectors.

Private firms in the professional and technical services, educational services, and administrative services industry sectors are among the top industry sectors receiving DHS procurement contracts. These sectors are relatively strong in the Washington metro area and in DC in particular, with much higher shares of total employment in these sectors in the DC region as compared to their share of total employment in the US as a whole (see appendix tables for 21 specific 4-digit NAICS within these sectors for which DC has a location quotient >1). These industry sectors serve a diverse array of clients in addition to DHS, and represent a large and growing source of employment (nearly 1 million employees in the DC MSA in 2010). Employment in both the educational services and professional and technical

services sectors has grown faster than total employment in the region. Administrative services employment has grown as well, but at a lower rate (see Figure 3D).

Figure 3D: DC MSA employment growth, select sectors (2001 employment=1)



Source: BEA

Firms in these sectors provide a diverse array of services, and offer employment opportunities in a variety of occupations. Table 3O lists the top twenty occupations across the professional and technical services, administrative services, and educational services sectors at the national level, ranked in descending order according to the number of employees in a given occupation. Employment projections indicate that these occupations provide significant employment in Washington, DC as well. Many of these occupations do not have the stringent education and experience requirements of the jobs available within DHS. Training in these occupations may provide a variety of employment opportunities for DC residents, not only at firms that may locate at the St. Elizabeths campus, but also at any number of firms in the District and the region.

More than half of the occupations listed in table 3O require minimal to moderate training, and account for a significant number of jobs in Washington, DC. For instance, the eight 'office and administrative support occupations' listed (SOC group 43) accounted for 64,800 jobs in DC in 2009, and DOES projects an additional 20,000 positions in these occupations by 2018. These occupations require only a high school diploma or vocational training, and moderate preparation to develop the necessary skills. Computer-related occupations also account for a large and growing source of employment in DC, although these occupations require more extensive vocational training or a 4-year degree. In addition, many of the most prevalent occupations in private-sector firms are similar to occupations within DHS, especially administrative, security, and computer/IT-related occupations.

Table 30: Top 20 Occupations in Professional and Technical Service, Administrative Services, and Education Services Sectors

Ranked in descending order based on total employment at the national level - employment figures shown are for Washington, DC

SOC Code	SOC Code Description	BLS 2009 Employment	DOES 2018 Employment	Typical Education Requirement
11-1021	General and operations managers	27,440	32,275	Vocational training
13-1111	Management analysts	14,150	23,589	Bachelor's degree
13-1199	Business operations specialists	29,720	39,335	n/a
13-2011	Accountants and auditors	10,790	15,879	Bachelor's degree
15-1031	Computer software engineers	3,110	5,036	Bachelor's degree
15-1041	Computer support specialists	3,970	5,313	Vocational training
15-1051	Computer systems analysts	3,770	5,456	Bachelor's degree
23-1011	Lawyers	28,440	46,120	Graduate school
33-9032	Security guards	12,070	18,212	High school
37-2011	Janitors and cleaners	14,600	21,330	OTJ
37-3011	Landscaping and groundskeeping	690	1,179	OTJ
43-1011	Supervisors/managers of office workers	4,600	5,772	Vocational training
43-3031	Bookkeeping, accounting, auditing clerks	4,520	5,998	Vocational training
43-4051	Customer service representatives	6,910	9,163	High school
43-4171	Receptionists and information clerks	6,870	9,434	High school
43-6011	Executive secretaries and administrators	13,630	17,677	Vocational training
43-6012	Legal secretaries	6,780	9,141	Vocational training
43-6014	Secretaries, except legal, executive	9,310	11,560	High school
43-9061	Office clerks, general	12,180	16,107	High school
53-7062	Laborers and freight/material movers	2,040	2,294	High school

Source: Bureau of Labor Statistics, DC Department of Employment Services, O*NET

Many of the private sector occupations listed above require relatively short term education programs or on-the-job training, which may be useful to under- and unemployed residents of Wards 7 and 8 with relatively lower educational attainment and skill levels. Training programs that prepare DC residents for occupations in these fields may provide opportunities for local residents to increase their opportunities for employment throughout the region, whether within DHS, in DHS-related private firms, or in regionally important industry sectors.

3.9 University, research and education assets in homeland security

The District of Columbia and its surrounding region are home to a variety of education and innovation assets, many of which directly relate to the broader missions of DHS. A combination of university research centers, federally affiliated educational institutions, federally funded research and development centers (FFRDCs), community colleges, and other related regional institutions complement and support DHS operations in the District and the region.

There are four homeland security-related university research centers located within the District at Georgetown and George Washington University (see descriptions below). Virginia and Maryland uni-

versities host an additional five centers. Federally affiliated educational institutions are also present in the region, with two in the District, one in Maryland, and three in Virginia. Northern Virginia is home to two Federally Funded Research and Development Centers (FFRDC), which are operated by private corporations to conduct independent research for DHS customers on a variety of topics. Maryland is home to two DHS Centers of Excellence, hosted at University of Maryland and Johns Hopkins University. The District currently has neither a FFRDC or a DHS Center of Excellence.

Many local and regional universities and colleges offer courses and programs related to homeland security, with a focus primarily on policy research as opposed to engineering, science and technology fields. Research centers in the District and the region focus on policy areas such as security studies, risk management, and security law.

University Research Centers

Within DC, both Georgetown University and George Washington Universities have established research centers dedicated to homeland security and related issues. Georgetown University's Center for Peace and Security Studies offers coursework and hosts important policy discussions on all facets of homeland security and the national and international processes that affect it. George Washington University is home to three related research institutes. The Homeland Security Policy Institute (HSPI) helps convene domestic and international policymakers and practitioners in order to offer solutions to current and future threats to the nation. The Center for Preparedness and Resilience, a division of the GWU Office of Homeland Security, is a comprehensive education and training solutions center for all first responders and emergency response officials from all emergency support functions and emergency response disciplines. And, the Institute for Crisis, Disaster and Risk Management (ICDRM) offers graduate level education in the area of crisis, emergency and risk management.

Outside of DC, there are numerous other university research centers within the region. In Virginia, DHS-related research institutions are located at four premiere research universities. The Institute for Infrastructure and Information Assurance can be found at James Madison University in Harrisonburg. George Mason University in Arlington is home to the Center for Infrastructure Protection and Homeland Security (CIP/HS) and the Terrorism, Transnational Crime and Corruption Center (TraCCC). At the University of Virginia in Charlottesville, both the Critical Incident Analysis Group/Homeland Security and Terrorism (CIAG) and the Center for National Security Law can be found. In Alexandria, Virginia Tech has established its Center for Technology, Security, and Policy (CTSP).

In Maryland, where the focus has often been on cyber security issues, there are a variety of research centers related to homeland security. The University of Maryland has established a number of research centers, including a Center of Excellence known as the National Consortium for the Study of Terrorism and Responses to Terrorism (START). The College Park campus is also home to the University of Maryland CyberSecurity Center, the University of Maryland Center for Advanced Study of Language, and the Maryland Fire and Rescue Institute. In addition to the Office of Critical Event Preparedness and Response (CEPAR), Johns Hopkins University in Baltimore is also home to a Center of Excellence - The National Center for the Study of Preparedness and Catastrophic Event Response (PACER).

Federally Affiliated Educational Institutions

In addition to these university research centers, there are also a number of educational programs related to homeland security and affiliated with the federal government. These programs help to train and educate federal, state, and local government employees, as well as law enforcement officials and other first responders. The District hosts just two of these – *National Defense University's Institute for Homeland Security Studies (IHSS)* and a branch of the *USDA Graduate School*. The IHSS is charged with conducting research and coordinating analytic support on homeland security issues and related training. The USDA offers a variety of training programs for both the government and the private sector. FEMA has established its *Emergency Management Institute (EMI)* at the National Emergency Training Center in Emmitsburg, Maryland. EMI develops emergency management training for government officials and first responders in order to minimize the impact of disasters on the American public. The *Defense Acquisition University (DAU)* and the Federal Acquisition Institute are located in Ft. Belvoir, Virginia, and are geared towards training for Pentagon employees in Acquisition, Technology, and Logistics (ATL). In Quantico, Virginia, the FBI has established its *FBI National Academy* as an advanced training facility for law enforcement executives. The CIA has its own university, known as the Sherman Kent School for Intelligence Analysis and located in northern Virginia.

Federally Funded Research and Development Centers (FFRDCs)

The Homeland Security Act of 2002 gave the Secretary of the Department of Homeland Security (DHS) the power to establish federally funded research and development centers (FFRDCs) to provide independent analysis of homeland security issues. There are two DHS-related FFRDCs located within the DC region: *Homeland Security Studies and Analysis Institute (HSSAI)* in Arlington, Virginia and *Homeland Security Systems Engineering and Development Institute (HS SEDI)* in McLean, Virginia. HSSAI provides the government with the expertise to conduct operational analysis, a variety of simulation models, and crosscutting mission analysis. HS SEDI provides technical advice to help DHS integrate plans and processes to improve acquisitions and IT systems development.

Community Colleges

There are many community colleges in the Washington, DC area that serve a variety of student needs. They include: Community College of DC (CCDC) in Washington, DC; Northern Virginia Community College (NVCC) and Lord Fairfax Community College (LFCC) in Virginia; and Prince George's Community College (PGCC), College of Southern Maryland (CSM), and Montgomery College in Maryland. DHS-related programs and courses in the District include CCDC's offerings in computer science technology and law enforcement. CCDC already has a presence in Wards 7 and 8, offering courses at Fletcher-Johnson and the PR Harris Education Center. Maryland's Prince George's Community College was designated a National Center of Academic Excellence in Information Assurance two-year Education by the National Security Agency and the Department of Homeland Security from academic years 2010 through 2015. CSM offers an Associate's Degree in Applied Science with some homeland security-related coursework, and MC offers courses in computer technology and information systems. In Virginia, NVCC offers programs in computer forensics, homeland security, cyber-terrorism, and cyber-fraud. LFCC offers programs in police science and information systems technology.

Ward 8 K-12 Programs

Several K-12 schools in Ward 8 have, or are developing, programs that train students for careers in a variety of occupations that relate to the DHS economy. These include career and technical education programs at Ward 8 public and private high schools, including programs that prepare students for careers in law enforcement/EMT, engineering technology, and computer programming/IT occupations. Table 3P lists the schools that offer these programs. Similarly, numerous regional elementary and middle schools have adopted STEM-focused (science, technology, engineering, and math) curriculum that prepare students to succeed in advanced studies in these disciplines (see appendix for a complete listing of local schools and relevant programs). Regional examples of STEM-focused programs include the STEM Academy in Arlington as an example of an initiative to attract more high school students to pursue STEM-related studies, earn college credits, and pursue STEM-related careers.

Table 3P: STEM and career and technical education programs at Ward 8 Schools

School Name	Program (currently available)
Academies at Anacostia	Allied Health including certifications in Emergency Management Technician and Certified Nursing Assistant; Law, Justice and Society
Anacostia HS	EMS; Nursing; Interactive Media; Law, Justice and Security
Ballou HS	Automotive Technology; Biotechnology; Mass Media and Communications
Ballou STAY HS	Automotive Technology; Communications Technology; Culinary Arts
Friendship Collegiate Academy	Allied Health including certifications in Emergency Management Technician, Certified Nursing Assistant, Sports Medicine and Pharmacy Tech; Engineering and Technology including certifications in HTML-3 Web Design, Network A+ Hardware essentials, CCNA, and Microsoft Certification.
Friendship Tech Prep	Introductory courses in Biotech and Engineering/Technology as of September 2012; Career and Technology Education Programs has provided teacher training and set up all classrooms for Project Lead the Way, a research based and project-based approach to mastering engineering and technology and other STEM subjects
H.D. Woodson HS	Business Administration; Finance; Marketing

Source: Office of the Deputy Mayor for Education and DC Public Schools, 2012

In addition, DHS plans to develop an academic outreach communications program specific to the community neighboring Saint. Elizabeth's campus, including outreach to K-12 and secondary academic institutions. Strategies for these programs include; coordinating DHS-related research opportunities for students at all levels; creating K-12 education program that introduces students to DHS, including a partnership with local police and emergency responders to educate young people on what to do in the event of an emergency, and; promoting internship, externship, and fellowship opportunities within DHS at local schools.

3.10 Ward 8 workforce development and business development organizations

The arrival of federal anchors and employees on the Saint Elizabeths West Campus provides significant opportunities for economic development in Ward 8, and associated job and income growth for local residents. In addition to direct employment at federal agencies that include entry-level and career ladder positions, a variety of occupations in supporting industry sectors offer employment potential at firms throughout the region (see section 3.8). Many jobs in supporting sectors offer viable opportunities for lower skilled workers since some level of training may be required, but not necessarily a college degree. The existing network of local business development organizations, and workforce development and career pathway programs are important assets for forming successful partnerships that train Ward 8 residents and help them secure jobs in these fields.

The DC Department of Employment Services, along with a network of service providers, offers job search and training service to DC residents, and has a variety of services available to residents of ward 7 and 8. DOES had over 1,200 residents in wards 7 and 8 registered and seeking employment in 2010. Many employment services customers are able to access training services that improve clients 'soft skills' (such as job interview skills, time management skills, etc.) in order to increase their employability. Similarly, a number of these programs provide services for unemployed residents who face additional barriers to employment beyond training, including substance abuse, criminal history, poor credit record, homelessness, mental health problems, and domestic violence. The appendix provides a table detailing programs offered by 38 training providers serving DOES clients, as well as detailed descriptions of 17 workforce training and related service providers operating in DC and Ward 8 in particular. These providers may be able to provide unique expertise and capacity to workforce services that may be offered on the St. Elizabeth's campus.

In addition to training programs for adults, Ward 8 high schools have implemented a variety of vocational training and internship programs that train students for a variety of occupations, including several that are relevant to the homeland security economy. Examples include law the Homeland Security and Law Enforcement program at Anacostia High, transfer programs between high schools and CCDC (the DC Community College), and Mayor Gray's Summer Youth Employment Program.

Numerous business support groups and intermediaries operate within the Ward 8 community, many of which are already working in neighborhoods that are adjacent to the Saint Elizabeths campus. Though Martin Luther King, Jr. Boulevard and Alabama Avenue have long struggled to maintain a viable and diverse commercial base, numerous small business development organizations have begun efforts to stabilize these areas, support existing businesses and cultivate entrepreneurs within these neighborhoods. An array of workforce development organizations and service providers, as well as city-wide business development initiatives, provide important services that may prove useful for the St. Elizabeths East Campus efforts to expand and coordinate the existing programs of Ward 8's numerous small business intermediaries and community development corporations. Table 3R lists examples of several organizations that are active in Ward 8 and whose programs are relevant to the East Campus and Innovation Hub's business support, employment and entrepreneurship focus.

Table 3R: Select Ward 8 Small Business Support, Workforce Development and Economic Development Organizations

Anacostia Business Improvement District (upcoming)	Operation Hope, Inc.
Anacostia Coordinating Council Inc. (ACC)	Opportunities Industrialization Center of Washington-OIC/DC
Anacostia Economic Development Corporation (AEDC)	Saint John Community Development Corporation
Arch Development Corporation (ADC)	Section 8(a) small business outreach (through GSA)
Community College of the District of Columbia	Small Business Development Center (SBDC) at AEDC
Congress Heights Community Training and Development Corporation (CHCTDC)	Toni Thomas Associates
Congress Heights Main Streets	University of the District of Columbia
Congress Heights Neighborhood Investment Fund (with DC Office of Planning)	Ward 8 Business Council
East of the River Community Development Corporation	Ward 8 Workforce Development Council
The Hive (ADC)	Wheeler Creek Community Development Corporation

See Resource Guide in Appendix for organization descriptions and website links

3.11 Insights from homeland security experts: contracting, innovating and learning

Stakeholders from industry and institutions provided their expertise via a series of focus groups in order to increase understanding of the homeland security economy, and to identify opportunities and challenges the DHS economy presents for the District of Columbia. One group included representatives from private sector firms that contract with federal government agencies including DHS. The second group included representatives from the educational community (universities, university-affiliated research institutions, and community colleges). The third group included representatives from the entrepreneurial support community, such as venture capital organizations and university-based accelerators. For a full listing of the participants, and SWOT tables summarizing comments from these focus groups, see Appendix.

Homeland security contractors expressed a strong potential for growth of DC-based firms in contracting with government agencies such as DHS. DC offers homeland security firms access to government and the ability to influence the national agenda. The area's highly educated labor force, strong public-private connections, and the general quality of life make DC an attractive location for these firms. The region has additional advantages stemming from the ability to align public and private finance resources with a strong base of technology companies and academic researchers. However, the focus group identified major obstacles that exist in doing business with DHS such as: constant changes in DHS agency priorities; differing standards for DHS components; and the DC region lacking the expertise and facilities to engage in all types of homeland security technologies and contracting opportunities.

DHS contractors agreed that support for innovation has great potential to transform the way the federal government operates, promote entrepreneurship, and strengthen linkages between the private sector and federal government. To that end, contractors suggested several elements for the Saint Elizabeths campus, including: advanced concepts labs and prototyping facilities; a demonstration "marketplace" for DHS products and services; and a conference center at the Saint Elizabeths site.

The **homeland security education focus group** noted that Washington DC has a highly educated and skilled labor force in the area of homeland security. The group also identified strong academic as well as R&D expertise in homeland security fields, which benefits from tight linkages between universities and the homeland security economy. The group suggested proximity to policymakers and industry experts in DC helps with setting up partnerships between university, government and business.

Despite the region's workforce assets, the group noted that large systems integrators have a huge, often unmet, demand for workers with intelligence, analytics and cybersecurity skills and they are concerned about the availability of qualified candidates. The lengthy and complicated security clearance process was also viewed as a barrier to employment in this industry. The group also felt that the secondary school system is not preparing students well to meet these demands and the education community could be more aware of the skill sets that are needed. The group suggested aligning university programs with labor demands in the industry and reaching back into the lower levels of the educational pipeline provide an opportunity to address this demand. The group also noted that despite the level of R & D expertise, the DC region's universities are not as engaged in the research, development and the commercialization of technologies that emerge from laboratories, and rates of commercialization are lower than peer universities in other areas.

The education focus group suggested several elements for the Saint Elizabeths campus: setting up a consortium of participating universities and businesses to support cyber research; creating an incubator for researchers; creating internship programs; establishing a pre-clearance processing service; programs to connect DC residents to DHS jobs; co-location of universities to enhance collaboration; and an education center modeled after the Army education program at Aberdeen Proving Ground, which provides a variety of lifelong learning opportunities for Army personnel, including counseling, financial aid, and courses in a variety of STEM topics.

The **innovation and entrepreneurship focus group** highlighted DC's strengths in the intelligence and security field, particularly as it relates to technological and R&D capacity, the existing intelligence infrastructure, access to federal government agencies and decision makers, diverse customer base, good universities, robust venture capital community, and emerging models for technology transfer and commercialization. The group identified weaknesses in the DC region's capacity for entrepreneurial business development, including a lack of an entrepreneurial culture that limits entrepreneurs from translating potential opportunities into viable businesses, products and services. Participants also noted the slowness of the federal government procurement process, which does not keep up with the typical entrepreneurial speed, as well as a lack of experienced serial entrepreneurs and investment capital (particularly angel capital) relative to several other regions of the nation.

This group identified opportunities in efforts to increase commercialization and entrepreneurship. The group suggested several elements for the Saint Elizabeths campus: incubator (but with a broad focus, not just homeland security); a product test bed similar to those at many military installations to demonstrate new products; partnerships between public and private investment organizations to increase the availability of venture capital; partnerships between the SBIR program and the investment commu-

nity; a showcase facility; research consortium; mentor programs; and efforts to increase collaboration between firms, entrepreneurs, universities, and the investment community.

3.12 Summary of insights from Ward 8 roundtable discussions: workforce, entrepreneurship and education

Roundtable meetings with Ward 8 stakeholders provided insights into the community dynamics, opportunities, and challenges facing Ward 8 residents and service providers. These roundtables focused on three topics: entrepreneurship and business development, workforce development, and education. The full listing of participating organizations, as well as summary tables of feedback, is provided in the Appendix.

Workforce development stakeholders offered information about the current strengths and weaknesses in workforce development programs operating in Ward 8 and explored a number of opportunities and potential programs with respect to the homeland security sector. Participants stressed that although there are many service providers who have been operating in the Ward for many years, they often struggle to get funding or are not able to train clients for jobs that are in high demand if they are not determined to be “fastest growing occupations” as defined by funding agencies. Participants emphasized the importance of training programs that take into account the current skill levels ward 8 residents, and consider not only the curricula necessary to train residents, but also the types of jobs clients can secure given their existing skills and training. Other challenges included the presence of many residents with mental and substance abuse issues or criminal records, which pose significant barriers to employment. Stakeholders emphasized that job placement cannot be the only area of focus of workforce development programs – programming must also consider and work toward better job retention once clients are placed in positions.

Stakeholders expressed an interest in expanding programs that allow professionals in various industries to provide input into the skills and training programs necessary for occupations in their fields. Stakeholders suggested working with small businesses to increase opportunities both to contract with the government and subcontract with larger contractors as a promising strategy. Participants seemed cautiously optimistic about the potential for development to benefit residents, while exploring ideas such as “earn while you learn” programs, certificate programs that train participants for available jobs (for example, emergency dispatchers, certified protection officers), programs that involve both parents and children in learning opportunities, and programs that involve employers so that they become familiar with applicants and heighten applicants’ chances of finding employment.

The **entrepreneurship and business development** roundtable explored business development assets and services available to entrepreneurs in Ward 8, as well as shortcomings of current initiatives. Current strengths included organizations that have considerable experience working in the area already, land available for redevelopment, and a strong transportation network. Stakeholders identified several challenges for business development in ward 8, including a lack of resources for seed funding to start new businesses, lack of retail businesses, no utility industrial rate available (making competition with Virginia and Maryland industrial companies more difficult), perception that the area is less safe than it is, a perceived lack of investment in infrastructure, street, and lighting improvements, and lack of quality high schools that are preparing students with the skills they need to join the workforce.

Ideas for improving business development and entrepreneurship in the Ward included increasing federal contracting with small and minority-owned businesses, emphasis on businesses that pay workers a living wage, looking at the future needs of DHS and related contractors and businesses (for example, supplying DHS' needs for basic supplies and services), creating a fund for minority business development (perhaps with matching funding programs), and finding a way to cultivate an entrepreneurial spirit and protect small businesses from being pushed out by larger chain stores.

The **education** roundtable explored current challenges in K-12 education in Ward 8 and the transition of youth into jobs that allow them to meet their potential, as well as possibilities for collaboration between schools in Ward 8 and activities that will occur on the Saint Elizabeths campus as a result of DHS's consolidation. Strengths in education and educational initiatives in Ward 8 include existing STEM programs, a strong internship program through the Urban Alliance, improving numbers of participants in DC's Tag Grant program, and increasing numbers of programs for adults to return to school. Weaknesses included currently low levels of educational attainment, larger numbers of students who have already dropped out or left school, and lack of certainty and funds for starting new programs. Participants in the roundtable stressed the importance of ensuring that training programs for students connect with existing jobs and employers, reaching kids at home and in their neighborhoods (where they spend the majority of their time), and filling after-school time with constructive activities for youth that actually interest them.

Ideas for improving educational delivery in Ward 8 included potentially formulating a curriculum that would interest students in homeland security-related careers, internships and other programs that allow students to learn about career pathways, and using OSSE student data to learn about trends and areas for improvement. Getting youth enthusiastic about future employment opportunities was viewed as critical for providing students with an incentive to stay in school; strategies to achieve this included guest-speaker or mentorship programs, and/or curricula that combine job training with education. Participants in both the DHS focus groups and Ward 8 roundtables noted that the Saint Elizabeths Innovation Hub and related programs offer an excellent opportunity to connect youth in Ward 8 to higher education and career development opportunities, and could serve as a venue to coordinate these programs and provide additional resources to Ward 8 students.

Implications for the Saint Elizabeths East Campus Innovation Hub and Strategy

The preceding analysis has implications for components of the Saint Elizabeths Innovation Hub and the District's innovation economy, both in terms of serving the needs of DHS economy stakeholders and in terms of increasing economic opportunities for local residents. These implications serve as the basis for many of the proposed Innovation Hub elements and Innovation Strategies discussed in chapters 4 and 5.

Entrepreneurship, Innovation and Business Development

- Top regional contractors in the Washington DC MSA include several large ‘systems houses’ such as IBM and SAIC. These firms coordinate closely with contracting federal agencies and often co-locate, suggesting these large firms may have an interest in office space at the East Campus near DHS and other federal tenants.
- Ward 8 firms received a disproportionately small share of DHS contracting activity. The Saint Elizabeths East Campus may address this gap with programs to increase the competitiveness of local firms, such as ‘how-to’ workshops on contracting with federal agencies, or information on subcontract opportunities available with the large ‘system houses.’
- In-Q-Tel maintains an interest in networking with the private sector and the academic community, suggesting that a strong relationship with the Saint Elizabeths Innovation Hub may be possible. Similarly, DHS’ Commercialization Office programs provide an avenue for collaboration for technology-based businesses.
- DC-based firms have not received SBIR investments from DHS to support development of innovative products and technologies, but several firms in Virginia and Maryland have received these investments. The Saint Elizabeths Innovation Hub campus may present an opportunity improve DC’s ability to attract innovative firms in the homeland security economy by providing a variety of support programs and facilities.
- The District does not have a technology-based economic development entity similar to TEDCO in Maryland or CIT in Virginia; the Saint Elizabeths Innovation Hub provides an opportunity to explore options to create an analogous organization.
- Although Maryland has strong cybersecurity assets, focus group participants and interviewees suggested that much of the cybersecurity work is in fact being done throughout the Washington, DC region, suggesting that the District may be able to capitalize on these existing strengths.
- DHS contractors felt that support for innovation has great potential to transform the way the federal government operates, promote entrepreneurship, and strengthen linkages between the private sector and federal government. To that end, contractors suggested several elements for the Saint Elizabeths campus: advanced concepts labs and prototyping facilities; a demonstration “market-place” for DHS products and services; and a conference center at the Saint Elizabeths site.
- The commercialization and entrepreneurship focus group suggested several elements for the Saint Elizabeths campus: incubator (but with a broad focus, not just homeland security); test bed; public investment for venture; partnerships between the SBIR program and the investment community; showcase facility; research consortium; mentor programs; and efforts to increase collaboration between firms, entrepreneurs, universities, and the investment community
- Stakeholder roundtable participants believe Ward 8 has the potential to capitalize on the revitalization of Saint Elizabeths, which requires clear communication regarding funding opportunities and partnerships with DHS and related agencies, and programs to promote small and minority business development.

Career Pathways and Workforce Development

- DHS employment in Washington DC has particularly high concentrations of management, administrative, and security occupations. About 93% of DHS jobs are at GS-level 8 or above, requiring advanced degrees and/or several years of experience. Given these requirements, gaining direct employment at DHS may be difficult for lower-skill workers in neighborhoods around Saint Elizabeths. As such, a focus on training for a range of occupations in industries and firms that support the regional security, intelligence and defense cluster may provide more opportunities for residents to gain skills and build their career.
- Numerous jobs at private businesses in the industry sectors that support DHS (professional and technical services, administrative services, and educational services) require only vocational or on-the-job training, and less experience than jobs within DHS. Examples include security guards and 'back-office' occupations such as clerks and secretaries. Other growing occupations, especially in IT, require more specialized training. These occupations are prevalent in many regional industries, not only those in the homeland security economy, suggesting more opportunities will be available for residents to secure jobs in these fields.
- Many regional training providers offer training services for the occupations mentioned above, as well as other services, such as career counseling, assessment and basic 'soft skills' development for job-seekers, as well as developing customized workforce training programs for businesses to upgrade their current employees' skills. These training providers may fit in well with any workforce development or employment services functions that the St. Elizabeth's campus plans to offer.
- DHS is supporting the use of USAJOBS.com as the portal to both DHS and all federal jobs for District residents (including limited entry-level/apprentice positions), and the development of DHS-related training programs for residents of communities near Saint Elizabeths. DHS, DC government and partners should continue to focus on educational and workforce training/support programs that could train residents to work in the homeland security cluster, in both federal agencies and supporting industries with similar occupations and skills requirements.
- CCDC and other area universities and colleges have expressed an interest in establishing programs or expanding course offerings at Saint Elizabeths. The region has several universities with research centers focused on issues relevant for DHS, as well as relevant degree and certificate programs. These include DHS Centers of Excellence at Maryland universities, as well as several Federally Funded Research and Development Centers. Potential co-location at the Saint Elizabeths innovation hub provides an opportunity for these various research centers to improve technology commercialization efforts, invest in shared resources, and engage local residents and students.
- Focus groups participants and interviewees expressed strong interest in seeing an educational component on the Saint Elizabeths campus, including: providing space for co-location of universities to enhance collaboration in DHS-related research and education; setting up a consortium of participating universities and businesses to support cyber research; creating a DHS Center of Excellence focused on commercialization of DHS technologies; creating an incubator for researchers; creating internship programs; establishing a pre-clearance processing service; creating programs to connect DC residents to DHS jobs; creating a 'Homeland Security University' campus that provides a common location to offer existing homeland security-related courses and degrees; and, creating an education center modeled after the Army education program at Aberdeen Proving Ground.

- Participants in both the DHS focus groups and Ward 8 roundtables noted that the Saint Elizabeths Innovation Hub and related programs offer an excellent opportunity to connect youth in Ward 8 to higher education and career development opportunities, and could serve as a venue to coordinate these programs and provide additional resources to Ward 8 students.
- A number of proposals to improve workforce development practices and processes were suggested during roundtable meetings held with service providers and community representatives. Many participants agreed that increasing certificate programs for in-demand positions such as emergency telecommunications dispatcher and certified protection officer – especially those that are stand-alone certifications not requiring multiple semesters of coursework – would be an effective course of action. Participants also suggested the creation of an information or referral center to connect programs, and nearly all stakeholders agreed that fostering relationships between certificate program leaders and participants and local employers was necessary. Participants also recommended creation of a database of DHS opportunities.

4. Innovation Hub Vision and Components

Vision for Saint Elizabeths

- *Build an environment (both programmatic and physical) that encourages the growth of entrepreneurial businesses in dynamic, innovation-driven industries in the District and facilitate partnering among the public and private sectors in support of innovation and commercialization.*
- *Serve as the centerpiece for District-wide efforts to diversify the DC economy and enable DC-based businesses to increase their competitiveness in private sector global markets.*
- *Leverage assets, and build capacity in under-served communities to ensure District residents and businesses participate in economic opportunities at Saint Elizabeths.*

To achieve these goals, the Saint Elizabeths Innovation Hub will be a research and technology center that is known globally for innovation and entrepreneurship in technology-based sectors. Although the Innovation Hub will not limit innovation to homeland security technologies, the hub will leverage the presence of the Department of Homeland Security (DHS) to develop model relationships between the public and private sectors in support of innovation. Saint Elizabeths will connect the surrounding Ward 8 community to the economic opportunities that are emerging at the Innovation Hub, and provide an array of services to develop links between the community economy and the emerging innovation hub economy.

The Saint Elizabeths East Campus offers an unparalleled opportunity for the District to diversify its economy and enable local businesses and residents to tap into the innovation economy. Based on the research presented in Chapter Three's 'Situational Analysis' that characterizes the District's asset base within the "DHS Economy" and related technology areas, this section describes the key physical and programmatic elements of an Innovation Hub that could be established at Saint Elizabeths.

A successful innovation hub offers potential for growth in terms of employment, research, technology transfer, commercialization and business development in a way that can transform Ward 8, East of the River communities, and the District. It could also support the District's priority to capture a larger fraction of the region's technology- and innovation-based economic activity over time; although recent Federal procurement growth has created economic growth in the District and the region, an important challenge for the future will be to preserve the District's ability to thrive as the Federal government reduces its expenditures over time as well as ensure that economic growth is directed towards underserved neighborhoods and residents in the District. Programming and physical elements within the hub would encourage a more entrepreneurial culture to reduce dependence on Federal procurement as well improve local career and contracting opportunities in the security, defense and intelligence economy.

Few regional innovation cluster implementation efforts offer such an opportunity as the Saint Elizabeths East Campus, where so many of the contributing assets can be co-located by design, and where there is proximity to federal anchors on the West Campus and direct access to transit, connecting the hub to regional innovation assets. In most regions, the organizations that support economic activity are

spread throughout a large geographic footprint, which can limit interactions among the social and business networks that are critical for generating ongoing innovation. If Saint Elizabeths East can become a magnet where all of the key organizational actors find value in creating a physical presence, their proximity could, catalyze investment, promote transactions and accelerate the development of a self-sustaining, innovation-driven economy.

Finally, the Innovation Hub at Saint Elizabeths could become part of a larger Innovation Zone that would encompass the commercial corridor in Ward 8 and continue along the southern Metro Green Line Corridor to establish connections to the four metro stations in Maryland. Financial and other incentives could be made available to firms interested in locating in the zone, hiring community residents and making a commitment to reinvest in wealth-building initiatives. Economic outcomes can significantly improve as businesses and residents of Ward 8 and nearby communities become the owners of principal economic assets based here, and develop the resources and capacity to support ongoing community reinvestment. The design of the full suite of initiatives that would be needed to build this capacity and implement a regional Innovation Zone is addressed directly within the companion EDA-funded project Regional Innovation Strategy led by the Carnegie Mellon team.

Innovation Hub Structure

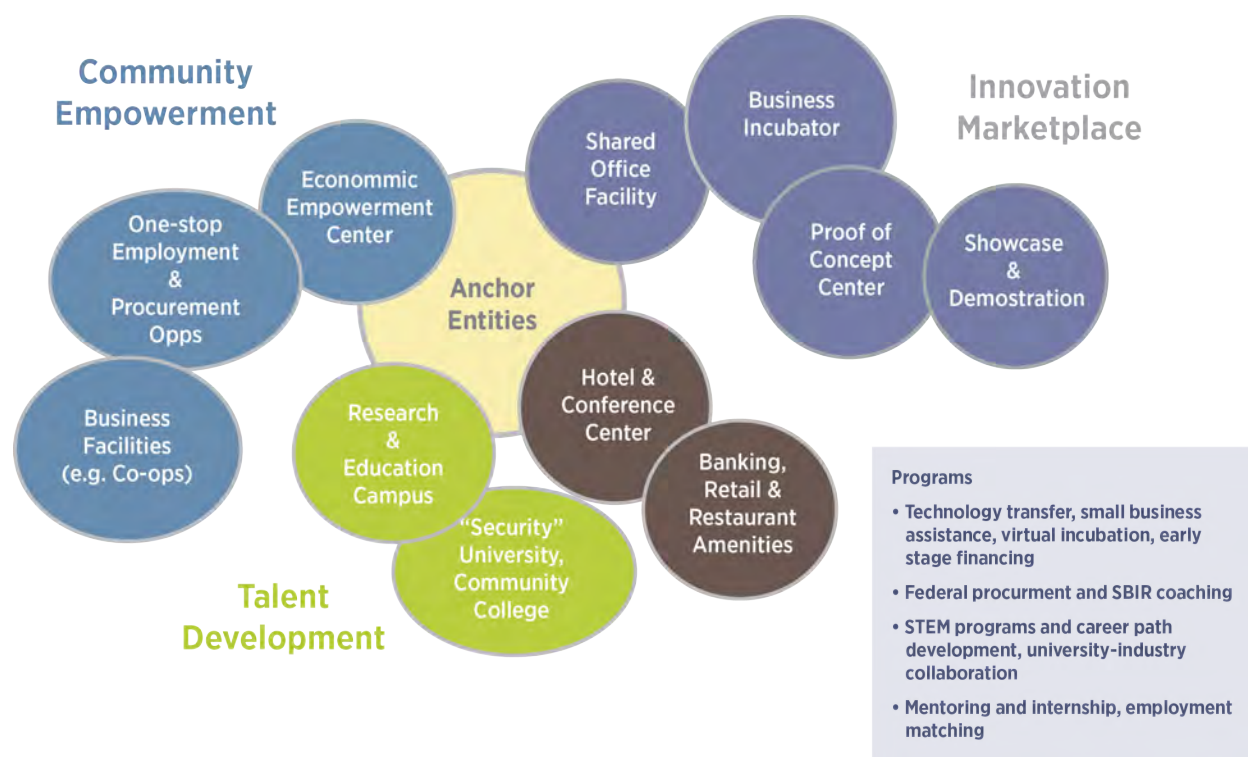
The establishment of the Innovation Hub at Saint Elizabeths and the successful delivery of its programs will require ongoing planning, partnerships among government, businesses, educational institutions and community organizations, and significant investment over the long term. When fully operational, the Hub will include three central community and economic development functions:

- **An innovation marketplace** to develop and showcase new technologies and businesses, driven by but not limited to innovations in support of homeland security, intelligence and defense-related technology sectors;
- **A community economic empowerment center** that provides coordinated support for local businesses, entrepreneurs and job-seekers, linked to the range of support services they need; and manages the evolution of campus programming to promote economic revitalization through increasing community ownership; and
- **A talent development campus** to provide offerings designed by regional institutions of higher education and workforce development organizations, serving students ranging from K-12 through professionals in a variety of occupations seeking advanced career credentials.

The design of the Innovation Hub would promote as much interaction as possible among these three centers and allow for some overlap among their functions. The design would be consistent with the guidelines provided in the East Campus Master Plan. The Campus is a historic landmark, and all building materials and architecture would be compatible with the historic structures and reviewed by the Historic Preservation Review Board. Development of the overall Saint Elizabeths East Campus would complement the Innovation Hub with a mixed-use development program, including mixed-income residential options, attractive retail and restaurant amenities, comfortable indoor and outdoor public spaces designed to promote both social and business networking, good transportation connections to

the Congress Heights Metro station, and infrastructure such as broadband Internet access consistent with its role as a state-of-the-art technology hub.

Components of An Innovation Hub



A. Innovation Marketplace

The Innovation Marketplace component of the Saint Elizabeths Innovation Hub capitalizes on the adjacency to federal security, intelligence and defense tenants on the West Campus to facilitate technology development, demonstration and commercialization, business creation and entrepreneurship, and strong relationships with Federal government agencies around procurement and contract research opportunities. Although the consolidation of the Department of Homeland Security provides a 'natural' primary focus, the Innovation Marketplace is an inclusive initiative that will seek relationships with other Federal agencies, as well as a variety of high-tech industry sectors in the DC region.

Areas of focus for the innovation marketplace could include building on existing public-private mechanisms for protection of the nation's critical infrastructure key resources and also integrating much of the military cyber security technologies developed at key installations in the region. The presence of these functions on the Saint Elizabeths East Campus could improve coordination and information sharing among key entities; by bringing the optimized global technologies into a common innovation marketplace, DHS and other Federal agencies would be able to assess new technologies efficiently. This integration could accelerate the adoption of technology solutions to satisfy the crosscutting needs of

both public and private critical infrastructure sectors. New innovation-based jobs and businesses are likely to be created as a result of this knowledge sharing. Where possible, the marketplace draws upon, reallocates or relocates existing resources or expected private-sector expenditures, so that the marketplace is created with minimal additional expense to stakeholders with the aim of becoming self-sustaining over time.

Three main goals guide the development of the Innovation Marketplace:

- Become a preferred site for the innovation-focused, high-tech facilities needed by Federal agencies, institutions, and private sector firms, especially to enable collaborative research and development, technology transfer and commercialization;
- Support entrepreneurship and small business development, targeting both private-sector markets and Federal contracting opportunities; and
- Serve as a focal point for networking and deal making interactions among individuals and organizations that are part of the broader region's most important innovation clusters.

Innovation Marketplace Facilities and Programs

A central focus of the Innovation Marketplace in the East Campus is to provide flexible, shared space and infrastructure to support research and technology development, entrepreneurship and business development as well as product demonstration and commercialization activities. The East Campus master plan allows for newly constructed offices and laboratories of federal tenants as well as defense-sector contractor firms to be located nearby, promoting productive interaction among large and small firms, as well as interactions among federal entities, universities and industry.

The facilities needs for many of these activities are similar. Business incubation, product prototyping, small scale assembly, storage and distribution, light manufacturing, and early business expansion facilities can all take place within either newly constructed or renovated buildings. High-growth, technology-based firms need flexible, inexpensive options for their early operation and later expansion. There is value in siting business expansion spaces close to a business incubator that would house young firms along with some of their suppliers in security and defense-related sectors. Open-floor unfinished space is suitable for product assembly and storage. Floor plans need not be a single level, but instead can be on multiple levels, taking advantage of compact, mixed use development. Exteriors of buildings in which small-scale product assembly takes place can be finished inexpensively but aesthetically so that these buildings are compatible with the surrounding historic structures and settings and contribute to the urban design of the overall Campus. The proposed road network will be built to standards that can accommodate trucks, supporting the movement of products related to light assembly.

Having such facilities available in the Innovation Hub will foster the growth of businesses and enable the creation of well-paying jobs with good career paths into the cluster for residents of nearby communities. Research has shown that cities can provide numerous benefits to light manufacturing and technology firms, including access to talent and knowledge sharing, as well as proximity to dense infrastructure and logistics networks, and a solid customer base (Mistry and Byron). In turn, the clustering of firms and facilities can accelerate local business growth and expand the tax base. Moreover, these business owners tend

to hire local residents and reinvest the wealth they acquire into their own communities. For companies that continue to expand, a move to other locations that can accommodate larger scale manufacturing and assembly footprint may be needed, but the central location of these East Campus facilities would make them an exceptionally attractive option for firms at both the early and intermediate stages of their development.

Key facilities and programs that would be valuable to have located near each other on the Saint Elizabeths East Campus would include:

Business Incubation

Fostering and growing businesses is an essential function of stimulating new job creation in entrepreneurial firms, including technology start-up organizations in the security, intelligence and defense-related areas, as well as supply chain companies and service-oriented businesses.

Business Incubator

The business incubator at the Saint Elizabeths innovation Hub would provide flexible space and shared business services at a reasonable cost for newly launched entrepreneurial firms. The incubator would enable tenant firms to improve their chances of survival and growth. Several types of incubators could be considered, such as a traditional incubator that enables firms to establish themselves and grow rapidly so that they "graduate" (on average within three years), leaving the incubator to continue their expansion at another larger site. The Hub could also support one or more business accelerators, for example to enable new entrepreneurs with software application ideas to receive focused, short-term assistance to launch their firms as quickly as possible.

In addition to offering a range of flexible office and lab space, the Business Incubator would enable entrepreneurs and start-ups to access shared support services in order to minimize costs. Initially, the incubator would offer amenities such as broadband Wi-Fi as well as spaces to enable product prototyping, small-scale manufacturing and assembly. Over time, the growth of new businesses and/or the developing specialization of Innovation Hub expertise may support several incubators or accelerator programs with specialized facilities to meet the needs of specific technology subsectors.

There are well-established benchmarks and rules of thumb for how to establish and operate business incubation programs and facilities. Successful business incubators are typically buildings that range from 30,000 to 150,000 square feet, with the average being 50,000 square feet. Tenant firms are usually small

Philadelphia's **University City Science Center (UCSC)** is the country's oldest and largest urban research park. The UCSC is a partnership between more than 30 nonprofit stakeholders including local universities, health care, research, and community development institutions. UCSC runs four main programs. **The Port** is a business incubator that offers lab space, plug and play infrastructure, broadband connectivity, and tax advantages to its tenants. The Port also has wet and dry labs, office space and related amenities, and tenants including venture capitalists. **Global Soft-Landing** is a program through which the Science Center encourages the establishment of operations for existing global companies, predominantly those specializing in the life sciences and information technology, in Philadelphia. The **QED Proof-of-Concept** offers emerging companies a chance to compete to receive funding as well as a year of continued business guidance. **Quorum** is the UCSC's most recent support program to entrepreneurs and innovators, which provides space for, and facilitates, networking and the exchange of ideas.

technology companies that find value in the implicit social networks that the incubator facility provides. These firms learn from their peers' experiences and might do business with each other and with some of the same vendors and customers. Incubators near universities often host spinoff companies from research projects; likewise, on the East Campus, spinoff companies from similar sectors of the security, intelligence and defense funding portfolio might be attracted to the same incubator facility.

The building interiors at the incubation facilities would house a range of small businesses ideally with many of the businesses within one building targeting their business plans within the same technology subsectors. This would mean that the St Es Innovation Hub incubators are designed to host firms with similar facility needs, which would promote the sharing of space, infrastructure and services, and encourage cost savings. Floor plan designs would allow for flexible expansion of individual firms as they grow. Internal space subdivisions could range from single, two-person offices to small office/lab suites of 1,000 square feet to larger sections of 3,000-7,500 square feet. Conference spaces and meeting rooms would be centrally located to facilitate sharing among the tenants, along with other shared services such as kitchen and vending areas, secretarial, computer server rooms, copying and document preparation, etc. Since lease rates would likely need to be slightly below market in order to accommodate young firms with limited cash flow, the renovation of existing buildings may be a more cost effective approach towards housing incubation programs than constructing new buildings.

The East Campus would also provide a 'virtual business incubator' that offers programs and shared business support services for firms that are not located within the physical incubator but want to be a part of the St Innovation Hub. Programs could include mentoring, financing and partnering programs such as those offered through DSLBD (e.g. Kauffman's FastTrac), SBA, and the SBDC network.

Small Business Technical Assistance Center

A Small Business Technical Assistance Center would offer help for both start-ups and existing small businesses with financial, legal, technical, marketing, and other matters. This assistance (both technology-specific and more general) would promote a strong connection between the innovation economy and its supply chain, especially to enable businesses owned by local residents to become part of the larger group economy. For example, small businesses could have access to 8A certification support, procurement-targeted programming, and other small-business lending support programs. The Center would draw upon the resources of existing District and Federal programs for expertise and mentoring, such as DC's Small Business Development Centers, Small Business and Innovation Research (SBIR) staff at DHS and Department of Defense agencies and local offices, National Institute of Standards and Technology (NIST) Manufacturing Extension Partnership Centers, and state programs such as Virginia's Center for Innovative Technology (CIT) and Maryland's Technology Development Corporation (TEDCO). The SBIR Coaching and Training would be targeted to DC-based start-ups and existing small businesses. Such a program would help these businesses to understand the Federal SBIR system and how to be successful in the application process, especially with DHS- and DOD-related research opportunities.

Entrepreneurial Support, Business Financing and Networking

Ensuring that entrepreneurs and businesses have access to business start-up and expansion resources and networks will be an important feature of the Innovation Hub at Saint Elizabeths. Resources would

include access to financial, legal, technical, business planning, marketing and other tools needed for growth. For example, users of the Hub would be able to access mentoring programs that tap into networks of experienced business and technology advisors. Technology-based businesses would receive technical assistance related to their unique needs.

A set of financing options could be offered as part of the Innovation Hub for small businesses seeking to operate within the defense and security sectors and throughout their supply chain. These could include early-stage financing for start-ups and firms in the seed stage, such as standard equity capital, equipment loans, and convertible debt notes as well as linking firms to investors who recognize the potential for a particular product. Options could also include gap financing that provides small, flexible and quickly-available grant to entrepreneurs and start-ups to enable early market research and product prototyping.

Venues on the East Campus would offer programming to attract key players from relevant university centers, Federally-Funded Research and Development Centers (FFRDCs) and other tech-based laboratories to participate in regular events and other interactions with DHS staff, small technology businesses, larger HS & defense-sector firms, and investors. Engaging university faculty, graduate students and staff with the entrepreneurial and business community takes ongoing, active effort but is a critical building block of an entrepreneurial innovation cluster. Using the East Campus in this way would draw activity into DC and also promote business, employment and educational connections between professionals from the affluent parts of the region and the Ward 8 business community.

Technology Transfer, Product Development and Commercialization

Proof-of-Concept and Prototype Center and Programs

A key component of the Innovation Hub at Saint Elizabeths is a proof-of concept and prototyping center where testing, evaluation and prototyping of laboratory innovations can take place. Activities could include developing a laboratory invention further, perhaps to a working prototype, and/or studying markets to test the readiness of the business concept. Products could include software developments as well as tangible concepts such as sensors or other mechanical devices. It is possible that this function can be housed within one or more of the business incubator facilities, but proximity to them would be valuable in any case.

The building where the proof-of concept and prototyping center is housed could include some offices and conference rooms, but would be made up mostly of flexible, easily reconfigurable, high-bay lab space suitable as a prototyping facility. It also would include a medium-size machine shop and large computer server room as part of its common space. Building finishes could be straightforward and cost-effective, but the external appearance would be consistent with the historic character of the campus.

An advanced concepts lab as part of this facility could provide specialized equipment and other resources to conduct complex modeling and simulation calculations, develop and test software and hardware applications, and allow for shared use of equipment in a secure environment.

The **Von Braun Center for Science & Innovation (VCSI)** at Cummings Research Park in Huntsville, Alabama, is a not-for profit R&D organization that brings together federal agencies, private firms, universities and other research organizations. The member organization, with 15 firms and 7 universities, has the goal of developing collaborative R&D activities that will aid critical mission areas of federal agencies and the private sector. Current projects at VCSI include: implementation of a Lunar Lander Robotic Test Bed in support of NASA, and development of a microsatellite for DoD. Financial support for VCSI comes from private sector partners and the federal government. In 2010, VCSI received funding from the SBA to develop a pilot program to help small high-tech companies create jobs and compete globally through mentoring, technology transfer and commercialization support.

The Innovation Marketplace component of the Saint Elizabeths Innovation Hub would also be an ideal location to coordinate Technology Transfer programs among representatives from intellectual property management offices associated with DHS, Federal labs, other Federally-funded research and development centers (FFRDCs), and regional colleges and universities. Tech transfer activities would include invention disclosures, patenting, licensing, and early market research for concepts with commercial potential that emerge from research labs. The presence of security-related Federal agencies would facilitate tech transfer scouting and the process for identifying gaps in the supply chain that could be filled by local firms.

Over time, a successful proof-of concept and prototyping center would help improve linkages between the business/investor community and the innovators working in labs, allowing the investors to see the technologies being developed and allowing researchers to better understand market demands. The center should be managed so that is available to the commercialization offices of federal security, intelligence and defense agencies, as well as the technology transfer offices of the region's universities in order to encourage new firms formed with federal or university technology to carry out this function locally.

The Innovation Hub at Saint Elizabeths campus could also create its own Manufacturing Extension Partnership (MEP) or equivalent organization to enable District manufacturers to access technology and technical assistance that can expand businesses and improve competitiveness through the development of new customers and products. NIST funds a network of MEPs nationwide to provide these services and to build stronger connections between innovation-driven, technology-focused firms and traditional manufacturers. The Innovation Hub could pursue NIST's competitive grant process, or alternatively could set up a private-sector organization that can accomplish similar goals without Federal involvement.

Showcase and Demonstration Facility

This Showcase and Demonstration Facility would enable companies with proven technologies to showcase their products and services to investors and customers, including both DHS, or larger firms seeking to acquire or invest in new technology firms. DHS has placed a high priority on the commercialization of innovative technologies emerging from its own laboratories. The agency also scouts for mission-related innovations that are being developed by large and small firms across the nation, whether or not DHS has been the funding source for these technology developments. DHS has expressed interest in locating a facility on the East Campus where these corporations could

demonstrate their technological advances for DHS procurement officers and technology division staff. To accommodate a wide range of components and systems, including both hardware and software, the facility would be large and its buildout would be customizable.

The **Center for Commercialization of Advanced Technology (CCAT)** in San Diego is a collaborative partnership between universities, industry and the government, which facilitates technology transfer from the Navy, the Department of Homeland Security, and the Department of Defense to companies, academics, and entrepreneurs. CCAT provides a number of business development services for its clients: market analysis, market feasibility studies, strategic and organization development, technology showcases, and opportunities for CCAT clients to present their technology and business plans to potential investors.

This facility could also house a Defense/Security-related Technology Testing and Evaluation Center to demonstrate, test, evaluate and showcase innovations in regionally active industry sectors, such as cybersecurity, software development and advanced IT networks.

While the innovation marketplace customers are primarily private sector firms, DHS and other public sector customers could either elect to purchase some of the technological solutions attracted by, and demonstrated at, the marketplace if these solutions fulfill their requirements, or track them for future purchase. Either way, these technologies would have some form of testing and/or track record prior to purchase by the government, which would help ensure prudent investments in technology. Private sector customers could help small businesses survive long enough to enter into the government procurement cycle if they choose, while also providing these small businesses with a proven track record of performance with a private sector purchaser, potentially improving a start-up business' prospects for a government contact.

There may also be value in creating a space within this facility that would be accessible to the public so that corporations could demonstrate their DHS-related products and services to a broader audience, leveraging the District's international visibility as a platform for showcasing. In return for this exposure, Firms may be willing to lend financial support for programs on the campus and/or using facilities on a fee-for-service basis. For example, demonstration firms could be given access to the resources of Testing and Evaluation Center and the Proof of Concept and Prototyping Center.

Contractor and Shared Office Facility

The East Campus has the ability to accommodate substantial office space and related amenities as part of the Innovation Hub in order to support the range of small, medium and large businesses that choose to locate there. Facilities may include office space for individual tenants as well as shared space for contractors.

DHS and many other federal agencies in the defense, energy and security sectors employ both on-site and off-site contractors to carry out the work of the government. These professionals typically have titles such as "systems engineering and technical assistance (SETA) contractors" and have advanced professional and technical credentials. SETA contracts are awarded competitively every few years but a small number of large firms dominate the competitive landscape. They usually maintain headquarters

offices near the agencies they support. It is likely that all of the major support contractor firms would find it advantageous to establish offices on the East Campus, both to house offsite contractors and to enable convenient access for federal tenants on the West Campus and their contractors and visitors to meeting spaces and other specialized equipment needed to perform the work.

Support contractors often prefer to locate their offices in separate buildings that can display their brand logos and create an environment that fits their individual corporate culture. However, given uncertainty around future federal contracting budgets, there may also be demand for such firms to lease space in a shared facility on the East Campus. Most of this space would consist of offices and possibly a few labs for development of technologies. Users and space would be supported by high-speed networking and high-end servers. Buildings would be designed to house more than one firm, with the possibility of signage to identify all major tenants. Conference spaces and meeting rooms would be located outside an access-controlled interior and should accommodate a range of group sizes for various kinds of routine and specialized meetings and events. Architectural design would maximize the net usable square feet and minimize the fraction of open, expansive space. Tenants would lease space on specific terms, and lease renewals may be common.

B. Talent Development, Research and Education Campus

A successful innovation hub must include educational and research components. The Saint Elizabeths East Campus is a venue where these programs could be linked effectively with each other and designed deliberately in partnership with industry and employers to guide learners toward specific career path opportunities that will become available in the security, intelligence and defense as well as the region's other growing economic sectors. A key feature of this is the promotion of educational pathways; the Innovation Hub would offer access to a continuum of education and skill-enhancing programs that enable students and adults to understand career pathways and pursue innovation related opportunities. The East Campus Master Plan allows for the presence of university, community college and research institutions that could offer talent development and education, as well as complimentary research and development and spin-off commercialization programs (addressed in more detail under 'Innovation Marketplace Facilities and Programs).

Four main goals guide the overall development of the Innovation Hub's Talent Development Campus:

- Promote access to postsecondary programs that target the innovation economy;
- Strengthen career pathway programs to grow the pipeline of innovation sector talent;
- Streamline the employment/job-seeker matching process; and
- Offer initiatives that retain workforce and allow employees to improve skill sets.

Talent Development, Research and Education Facilities and Programs

The Innovation Hub at Saint Elizabeths is an ideal location for university partnerships to deliver complementary educational programs for individuals interested in pursuing careers within security and defense-related sectors. Institutions of higher education throughout the National Capital Region offer education programs as well as sponsored research in areas related in some way to the DHS Economy; the Innovation Hub would be a central point for existing and new programs. Community college pro-

grams would be an important part of the mix, offering programs that support careers in the cluster, including both those within federal agencies and those in private-sector firms and nonprofit organizations. Entrepreneurship education offered here can be tailored to the specific characteristics of firms in security and defense-related sectors.

In addition to traditional postsecondary education programs, the Innovation Hub would offer continuing education programs aimed at employees in the security, intelligence and defense economies and become a gathering place for technical conferences and other public events related to new challenges and directions in the security and defense sectors. To round out the Talent Development offerings, the Innovation Hub would include a focus on education pathways that enhance the K-12 students' understanding of career opportunities related to the innovation economy.

Renovating the existing buildings whenever feasible, the Saint Elizabeths Innovation Hub would include classrooms, computer labs, and community meeting places in several adjacent buildings. Some of the spaces may be shared by several educational institutions; for example, to offer joint programs. Facilities for educational programs could include some laboratories. In order to prepare students at all levels for careers in the security and defense sectors, these laboratory facilities would likely have similar characteristics to those designed for new technology-based firms and existing contractors within the Innovation Marketplace. It would be desirable for community college programs to be housed in a particularly distinctive building with exterior signage that would welcome community residents and nontraditional students.

Postsecondary Programs and Facilities

A central focus of the talent development campus would be a University and/or Educational Consortium that houses collaborative educational and research programs aligned with the region's high growth clusters and employment demand in the homeland security and innovation economy. The University's offerings would include traditional and night education toward both GED and advanced degrees in areas of importance to the security, intelligence and defense-sector economies. The initiative would promote strong relationships among regional universities and with the employer and investment communities. Senior managers in relevant government and industry organizations could play advising or adjunct teaching roles in the region's universities. The University at Saint Elizabeths could be a satellite location for regional institutions that offer appropriate programs.

The availability of Community College programs and/or satellite locations at or in close proximity to Saint Elizabeths would also be a valuable addition to the Innovation Hub's educational offerings. The existing Ward 8 presence of the District's community college might expand to create a highly visible and accessible site on the East Campus. Curriculum could be designed by federal agencies and private-

The **National Institute for Aerospace (NIA)** in Hampton Roads, Virginia is a non-profit research and graduate education institute formed by a consortium of research universities. NIA has research, tech transfer and educational functions, with scientific and engineering research is sponsored by NASA. The institute offers Master's, Doctoral and Post-doctoral degrees in engineering and physics fields. Students study at NIA, but degrees are awarded by NIA's partner institutions, including Georgia Tech, North Carolina State University, UMD, Virginia Tech, and the University of Virginia. The Institute also conducts continuing education, seminars and workshops.

sector firms that are offering jobs with career paths into the homeland security, intelligence and defense-sector supply chain (e.g. contract acquisitions). This would align training with available jobs, with commitments to hire successful graduates by these employers. Program offerings would not be limited to the security sector, but could include a similar alignment with other regional growth jobs. A community college presence could also act as a valuable partner for the Economic Empowerment Center and the technical assistance programming for new business formation and cooperative businesses.

Career Pathway, Training and Continuing Education

In addition to traditional postsecondary education programs, the Innovation Hub would offer continuing education programs aimed at employees in the security, intelligence and defense economies. DHS and other federal agencies traditionally invest in a suite of continuing education programs for staff, with courses and seminars are often delivered by a faculty selected from among the region's universities. Given the proximity to federal anchors on the West Campus, the Innovation Hub on the East Campus could provide proximate continuing education programs that are tailored to the specific needs of anchors and supply chain firms. Continuing Education for federal agencies and the region's professional and contractor employees (including those on both professional and nonprofessional career tracks) could leverage research advances that the universities and the region's DHS-funded laboratories are making in DHS-relevant technology areas.

Philadelphia's University City Science Center (UCSC) offers a number of programs that promote science education and career pathways. **Breadboard: Creative Applications of Technology** is a program that works with local education to provide STEM opportunities and activities to local students, and runs a gallery where art and technology is displayed. UCSC also works with Praxis, an organization that encourages students of color to explore science at early ages. UCSC is a member of **Philadelphia Math + Science**, which partners with Philadelphia Academies to place summer student interns with Science Center resident companies.

At the other end of the educational continuum, the Innovation Hub would include a focus on education pathways that enhance the K-12 students' understanding of career opportunities related to the innovation economy. A particular emphasis would be on Science, Technology, Engineering and Math (STEM), and early exposure to STEM programs, initiatives and careers, career mentoring, internships and postsecondary certifications and training. The Campus would host collaborative initiatives among local elementary, middle and high schools, community colleges and other workforce training providers, and regional universities. Partnerships with local schools would enable the District to design facilities for the East Campus to support well-connected out-of-school-time programming with an articulated path into post-secondary career training for the high-growth parts of the regional economy.

The Innovation Hub would also be a key venue for Workforce Training programs, serving as a platform for expanding those programs that are already underway in Ward 8 and nearby communities, and targeting them to specifically to link adults to careers in the homeland security and innovation economies, and including other growing regional occupations. These programs would be coordinated with Federal agencies, the private sector, postsecondary institutions and existing service providers in the design of career pathway programs. Training could prepare citizens for entry-level through professional positions, such as:

computer software engineer, computer systems analysts, accountants/auditors, management analysts (bachelor degree); computer support specialists, administrative supervisors, bookkeepers, legal secretaries, police (associate's degree/vocational training); janitors, groundskeepers, security, and receptionists/clerks (on-the-job training).

Research and Development

Led by core research institution(s) in partnership with regional universities and in collaboration with federal security, intelligence and defense agencies, the University would develop appropriate focus areas, for example in cyber-security, critical and infrastructure, bringing together leading experts from each partner institution to pursue cutting-edge education, research and technology development. The region's universities, associations, and research institutions would also collaborate to design and develop appropriate laboratories, facilities and administrative structures to accommodate joint research, development and education projects, with projects funded by DHS Science and Technology programs possibly serving as an initial area of focus. The Innovation Hub could also become a gathering place for technical conferences and other public events related to new challenges and directions in the security and defense sectors.

An additional opportunity exists with the DHS Center of Excellence (COE) program — when DHS next creates a COE to supplement its existing portfolio of such centers, the Saint Elizabeths East Campus could be a strong contender for its location. In addition to enabling collaboration among research programs hosted by the region's universities, the new center could enable joint management of technology transfer aligned with DHS's evolving commercialization needs.

C. Community Economic Empowerment

Comprehensive revitalization occurs when a community fully participates in the local economy, such as residents and entrepreneurs controlling economic assets and owning companies, which keeps dollars circulating among local businesses, and allows the community to reinvest and build increasing wealth over time. Providing expanded economic opportunities for residents East of the River is a priority of the District, and the redevelopment of the Saint Elizabeths East Campus and the creation of an Innovation Hub are intended as key catalysts of such growth. Decades of poverty, poor educational options and high unemployment have left the communities surrounding Saint Elizabeths with very limited opportunity for ownership or participation in the region's growing economic clusters.

As noted in the companion EDA-funded Regional Innovation Strategy, the establishment of an innovation hub within a predominantly African American ethnic community would be unprecedented in the nation. Whether the highest-growth regional innovation clusters focus on homeland security, defense or other technology areas, the Community Economic Empowerment functions of the Saint Elizabeths Innovation Hub provide an opportunity to address longstanding economic challenges by engaging residents in a meaningful way in the technology-based innovation economy and its educational pipeline.

Three main goals guide the development of the Economic Empowerment component of the Innovation Hub:

- To build the workforce and entrepreneurial capacity of DC residents and ensure they participate in the region's economic opportunities;
- To promote entrepreneurship related to the procurement needs of DHS and defense agencies, other regional anchor institutions, and large private-sector firms; and
- To build the capacity for local ownership and management of economic assets so that reinvestment of wealth created by these business owners can stimulate and sustain economic and neighborhood revitalization within the communities near the Saint Elizabeth's campus.

Community Economic Empowerment Facilities and Programs

Economic empowerment begins with wealth-building initiatives tailored to the culture and the needs of local entrepreneurs, job seekers and their families. A central feature of this part of the campus is the Empowerment Center, which is intended to directly build the capacity of the local residents and workers for participation in the innovation economy. The Empowerment Center would serve as the primary entry point for local businesses and residents to interact with the Innovation Hub and access its services through workforce, entrepreneurship and training programs.

The Community Economic Empowerment component of the Innovation Hub would also provide small business advising, banking, loan and grant programs; investment sourcing for new entrepreneurs within the expanding supply chain; and support to launch and manage employee-owned businesses. Innovative models towards business ownership and growth would be considered and promoted, such as cooperative business strategies that grow employee-owned firms. Job training and business support programming would be coordinated with the social services that many of these individuals would need.

Empowerment Center Facilities and Programming

The Empowerment Center would focus on community economic empowerment by offering programs to support entrepreneurial business creation, small business technical assistance, and a range of individual, family, and community support services that complement and augment the Innovation Hub's business support programs, as well as linkage to workforce and training programs. Examples could include career, academic, or financial counseling, day care facilities for parents attending Center programs, and flexible space for community meetings. To ensure that the local community participates and helps guide overall Innovation Hub development, the Empowerment Center would serve as a key partner with input into Hub coordination and management. This will ensure that programming offered by DHS, private-sector firms, educational institutions and community organizations are mutually supporting and evolve over time to remain highly effective in bridging the innovation and community economies. The Empowerment Center would be housed within an easily accessible meeting place on the East Campus. Its physical design would be rooted in local culture so that it will be welcoming to members of the local community.

The Empowerment Center would offer both Entrepreneurship and Workforce Training programs, including capacity-building programming to prepare residents to establish and operate new businesses, as well as workforce and skill development training programs. The Center would tailor programs to

address the specific needs of female entrepreneurs, existing informal entrepreneurs, and local residents. The Center would coordinate its activities with the Innovation Marketplace's Small Business Technical Assistance Center and Business Incubator to enable a seamless transition of services for entrepreneurs as they move forward and establish their formal businesses.

The **Evergreen Cooperatives program** is a partnership between anchor institutions along Cleveland's Health Tech Corridor and six neighborhoods aimed at providing goods and services while also creating quality jobs for residents in employee-owned companies that hire and operate locally. One of the program's initiatives, the Evergreen Cooperative Laundry (ECL), is the region's first LEED-certified commercial laundry facility. ECL provides services to local health care facilities while advancing green initiatives (such as reducing the use of toxic chemicals and eliminating energy inefficiencies) and cutting operating costs for clients. Employee "owners" receive training in operations, life-skills, sustainability and ownership principles, and build equity in companies. A percentage of pre-tax profits from the Evergreen program get reinvested in the local community, helping create more jobs. The Evergreen cooperatives follow an organizational structure designed by the Ohio Employee Ownership Center at Kent State University.

As part of its offering the Empowerment Center would host a 'One-Stop' approach for career training, placement and procurement, acting as a portal for job and business opportunities. The Center would include programs to: link entrepreneurs to government contracting and minority/women/disadvantaged business support; provide informal brokering between small entrepreneurial firms and individual angel investors or venture capital funds; and offer shared back-office support for small businesses such as accounting, legal, human relations, health insurance as well as programs such as technology executives-in-residence. The Center would also coordinate its programs with employment training and placement programs in partnership with employers. As a particularly compelling example, a strategy to design and launch Cooperative Businesses would enable employee-owned firms to become part of the supply chain for DHS and its contractors firms. Programming would include workforce training targeted to the specific jobs in the new businesses and technical assistance and access to financing aligned to the specific needs of these businesses.

While the programs of the Empowerment Center may appear to overlap with the Innovation Marketplace and Talent Development components of the Innovation Hub, the Empowerment Center services would instead be complimentary and supportive, addressing a broader range of community development opportunities than those related to the security, intelligence, defense and high-tech economies and providing fundamental capacity-building programs and training. Over time an increasing number

The **African Development Center (ADC)** in Minnesota works within the state's African communities to start and sustain businesses, build wealth, and promote community reinvestment. ADC seeks to reduce language, cultural and religious barriers facing immigrants in order to create a path towards financial success. ADC is a leader in micro-lending to small businesses, outperforming the largest banking institutions in the state. ADC has been recognized as the top small business lender of the City of Minneapolis, offering innovative financial products as well as culturally competent services through workshops and consultations on financial literacy, business development, and home ownership. ADC's work has validated studies showing that increasing the rates of self-employment and home ownership contributes to the revitalization of neglected neighborhoods and links mainstream businesses with the state's estimated \$6 billion ethnic economy.

of local businesses and job seekers will gain the specific experience needed to access the entrepreneurial and professional career opportunities in the security and defense-sector clusters that are available within the Innovation Marketplace.

The Center would also support local access to Community Development Financial Institutions and Programs. These include community development venture capital funds to serve businesses and organizations in the communities near Saint Elizabeths. Credit unions, banking and lending institutions would offer a suite of services for unbanked and under-banked individuals, families, and businesses. For example, a Microfinance Program for local entrepreneurs, connected to other lending programs, could create a glide path to growth for microbusinesses to move up the value chain from informal and retail sales toward higher-growth distribution and supply.

Innovation Hub Management and Governance

The establishment of a management organization that can implement the strategy and vision for the Innovation Hub at Saint Elizabeths will be critical to the long-term success of the Hub. This organization would develop and guide the overall programming portfolio, raise funds to support it, oversee the delivery of programs and manage their evolution. Its structure and staffing would follow the best current management practices within both traditional research parks and broader, typically government-funded, regional innovation cluster initiatives. To align with the vision for the Innovation Hub at Saint Elizabeths, the management organization should include talent with expertise in innovation clusters and the associated economy including local services, the supply chain and exporting businesses, as well as an understanding of the significant need and opportunities for local community and economic development within the predominantly ethnic African American communities adjacent to the campus. The management organization would develop and maintain strong relationships within the leadership network among businesses, Federal agencies, their contractors, and educational institutions in the District and throughout the broader region. The governing board for the Hub would include business and civic leaders from the local community, leaders of the participating educational institutions, and representatives from the security, intelligence, defense and other relevant agencies as well as their contractors and supply-chain firms.

In other regions, programming to support and stimulate regional economic development in innovation-driven sectors has been funded and managed in several ways. Some regions provide for no management, simply allowing organic development to occur. This would not be a desirable option for the Saint Elizabeths Innovation Hub, since the District owns and controls the entire East Campus and thereby can design facilities and programming a priori to achieve a well-defined set of goals.

Private-sector, for-profit management organization. In this case the District would create a dedicated organization but cede its control to a private sector, for-profit corporation. Such a corporation would represent the interests of the corporate anchors and other long-term tenants on the campus and increase tax revenue for the District as these firms become more successful. The Cambridge Innovation Center in Massachusetts implements one version of such a model within a single building that houses nearly 500 entrepreneurial businesses, investment firms, nonprofit organizations and government agencies. The Center is managed to enable entrepreneurial firms to establish themselves as quickly as

possible and to do business efficiently, with their back-office needs met effectively by the Center's staff. This business model has made the Center profitable over time through economies of scale and flexibility in meeting the needs of its tenants.

Local and regional industry associations such as Technology Councils often take on some of the functions for their member firms that the Saint Elizabeths Innovation Hub might also offer for its tenants, such as business networking, discounted health insurance, shared human resources and other services, and events programming, even when member firms are located far from each other.

Various public-private partnerships and private entities were created to manage different aspects of the **Adlershof Science and Technology Park** in **Berlin**. WISTA, a public-private agency originally founded by the state to implement the park concept now manages its operations. WISTA oversees construction, sales, and leasing of office space and land while also providing support services and networking for start-ups. WISTA is managed by a supervisory board and advisory council, and the state of Berlin is the majority shareholder. WISTA operates a subsidiary that delivers commercial, technical and infrastructure services for the buildings and land in the Park. Adlershof Development Agency is responsible for the overall planning and development of the larger area; working closely with WISTA, it can sell plots of land to investees and is in charge of marketing the Park. Adlershof also operates an **International Office**, which fosters international partnerships. Initiatives include a networking project called BaSIC, which offers market entry assistance to small and medium-sized businesses and a 'Knowledge Management' project, which enhances networks between universities and technology parks. A separate entity, the **Innovation Center Berlin** manages the incubators in the Adlershof district, offering a range of services to entrepreneurs, including business concept coaching, offices, laboratories, and multi-functional spaces.

Government-funded 501(c)(3) nonprofit research, education and economic development organization.

This is a common strategy employed by states wishing to accelerate economic growth in clusters identified by research as having high potential for their regions. Under this approach, a nonprofit corporation receives state funding, sometimes augmented by philanthropic foundation grants, to make early-stage investments in entrepreneurial technology firms. The charitable status granted to such nonprofits is usually justified by the location of the firms in cities where unemployment rates are high or where population has been declining, even though in most cases the firms that receive this funding do not employ citizens from low-income communities and do not do business in the most economically distressed parts of their regions.

Virginia's Center for Innovative Technology and Pennsylvania's Ben Franklin centers and Life Sciences Greenhouses are noteworthy examples of such organizations. This could be an appropriate model to adapt for the management of the Saint Elizabeths Hub and campus, although the scope of its charter would likely be much broader than the specific early business support that these state-funded technology-based economic development organizations provide.

Government agency. This model implements a local, regional or state strategy for technology-based cluster growth directly through a state agency. Maryland's Technology Development Corporation (TEDCO) and Prince George's County Economic Development Corporation are nearby examples. For Saint Elizabeths, a District agency would be created with a charter to provide early-stage business

The **Maryland Technology Development Corporation (TEDCO)** is a leading technology-based economic development organization that makes investments in technology firms, R&D projects, technology transfer and commercialization. TEDCO is an independent entity that was created by the Maryland General Assembly in 1998. Governed by a 15-member board that includes private, university, non-profit and public representatives, TEDCO initially received a seed grant from the State and then secured federal grants over the next few years. In 2004, it started receiving state appropriations also. TEDCO offers a range of funding opportunities to businesses. For example, the **Maryland Technology Transfer and Commercialization Fund** provides up to \$75,000 to firms that develop technology-based products and services. Firms must collaborate with universities or labs or be affiliated with an incubator company in the state, and meet a set of criteria related to size, age and venture investments. Firms also must have more than 50% of their employees present in the state of Maryland. The **Maryland Minority Research & Development Initiative** fund is aimed at increasing minority and women-owned businesses' access to federal grants (e.g. SBIR and STTR) for early stage research and development projects. The initiative provides training and business assistance, pre-submission grant-proposal review, access to equipment and expertise of the University of Maryland and federal laboratories in the state.

support and financing, tenant attraction, and coordination of programming across the campus with a focus on networking among businesses and with Federal agencies and productive interactions with educational institutions. The same agency could also manage the evolution of the overall campus development through the remainder of the design, development and construction phases.

Temporary management organization. Under this approach, an organization would be funded by government or industry association, but designed to go out of business as soon as certain innovation-related development, programming and performance milestones have been achieved.

Program evolution would take place in partnership with community business leaders, educators and citizens. Both the governing board and a community-based advisory group would help track the performance goals of the Hub management organization in terms business growth and attraction, employment, and education as well as the realization of a common vision for District and regional economic development, broadly shared economic opportunity, and local economic revitalization through community ownership, wealth-building and reinvestment.

The most important goal for the Innovation Hub is that it should become a self-sustaining center of commerce. It should foster and support a local for-profit economy that takes advantage of the presence of security, intelligence, defense and other federal agencies in the region. It should become a gateway for global commerce. It should provide jobs and entrepreneurial opportunities for the residents of Ward 8 and other nearby communities. Over time, these employees, entrepreneurs and their businesses will create, accumulate and reinvest local wealth and thereby reduce conditions of economic distress. These goals are achievable if the planning and implementation of the Innovation Hub takes place in tandem with a suite of capacity-building initiatives designed in partnership with local leaders and their businesses. These initiatives would reflect an understanding of the specific demographics, socioeconomic and cultural conditions of the local community as well as the economic development issues that have led to the current conditions of distress. Under this targeted approach, the District can expect to see decreases in poverty and unemployment, and instead benefit from an ex-

panded set of economic opportunities East of the River where individual workers, entrepreneurs and businesses of these local communities become essential contributors within the larger innovation-driven economy, resulting in increased employment, income, revenues and fiscal stability.

5. Implementation Strategies

The redevelopment of the Saint Elizabeths East Campus presents an unprecedented opportunity to catalyze economic growth East of the River and to implement a comprehensive Innovation Hub where all necessary contributing assets can be co-located by design and undertaken – from the outset – as part of a coordinated economic development strategy. The Innovation Hub at Saint Elizabeths East is envisioned as an integrated center of research, education, training, entrepreneurship, technology transfer, and private sector commercial activities. The District intends for the Hub to be not only known globally for innovation and entrepreneurship in security, defense and other technology-based sectors but also to enable members of local communities to participate in the economic opportunities that will emerge throughout the regional innovation economy and its global supply chain. The transformation of the East Campus is viewed as having the potential to –

- Create a range of jobs and business development opportunities tied to the technology and national security sectors.
- Link District residents to jobs, business and education opportunities through pathways to employment, training and entrepreneurship.
- Attract private sector investment to support business and job expansion.
- Develop an education and training hub that equips residents with the skills to access the innovation economy.
- Position the District at the center of a new regional innovation cluster that takes advantage of direct transit access at the campus.
- Act as a model for national security, innovative approaches in research and development, incubation, commercialization as well as for regional collaboration and community growth.
- Support neighborhood revitalization, with improved retail and other amenities on the East Campus and in Congress Heights.

Saint Elizabeths is poised to become a magnet where all of the key organizational actors find value in creating a physical presence, whereby proximity could promote deal making, catalyze investment and accelerate the development of a self-sustaining, innovation-driven economy. The Innovation Hub is an integral part of a larger development program for the East Campus that includes housing, office, hotel, retail and restaurant amenities, as well as public spaces designed to promote both social and business networking, good transportation connections to the Congress Heights Metro station, and infrastructure such as broadband Internet access consistent with its role as a state-of-the-art technology hub. The East Campus is an ideal location for an innovation hub, particularly given its capacity to host a significant cluster of facilities and programs that are in proximity to federal anchors on the West Campus.

Capitalizing on this opportunity will require not only new initiatives, but innovative approaches that leverage the assets and resources of the District and Ward 8, and provide the basis for partnerships and investments going forward. New partnerships must be created and sustained across

borders, between public and private institutions and funders, businesses, educational institutions and community organizations. If this work begins immediately, the bridges that hold so much promise can finally be created between the region's economic engine and the District's East of the River communities. The city faces a unique window of opportunity in which to undertake actions, given its strengthening economy, its ability to attract and nurture talent, and the favorable investment climate. The Innovation Strategy builds on these advantages in order to establish the city as a leader in the global economy. This section describes the specific strategies for the implementation of an Innovation Hub at Saint Elizabeths.

Comprehensive Framework

The DC Innovation Strategy offers a comprehensive set of actions that can guide this effort over the long term, with strategies categorized and phased over time. The strategies that have been proposed include approaches to physical development as well as programming that could begin before the Innovation Hub has been fully completed. The strategies discuss actions designed for implementation by a range of entities, including government, private sector industry, education institutions, foundations and service providers. The strategies were informed by the preceding research and analysis, as well as interviews and feedback from industry experts, local providers of business development, education and workforce services, key local government agencies and stakeholders.

Innovation Hub Components

Innovation Marketplace: facilitates technology development, demonstration and commercialization, business creation and entrepreneurship, and strong relationships with Federal government agencies, private industry and higher educational institutions around research, development, contracting and procurement opportunities.

Community economic empowerment: helps build workforce and entrepreneurial capacity of DC residents to ensure they participate in the region's economic opportunities, specifically related to the procurement needs of DHS and defense agencies, other regional anchor institutions, and large private-sector firms.

Talent development: strengthens career pathway programs in order to grow the pipeline of innovation sector talent including a focus on education, workforce training, job matching and skill enhancement through a coordinated suite of programs.

When fully operational, the Innovation Hub will include three central community and economic development elements: an **innovation marketplace** that develops and showcase new technologies and promotes businesses, an empowerment center that provides coordinated support for local businesses, entrepreneurs and job-seekers, and a talent development campus that offers education and career pathway support for accessing opportunities in the innovation economy.

The elements of the innovation hub will evolve as the overall redevelopment of the Saint Elizabeths East Campus takes place. The implementation of the Hub is a long-term effort, which is expected to occur over the following phases:

- Innovation Phase One (2013-2015): focused on attracting core tenants (e.g. innovation anchors) as well as launching strategic programs (e.g. small business access of federal contracting, career pathway support) and pilot initiatives (e.g. food incubator). This phase occurs concurrently with phase one of the overall East Campus redevelopment, designed to bring housing, retail, office and amenities to Saint Elizabeths.
- Innovation Phase Two (2016-2020): developing key facilities and programs that support entrepreneurship, community empowerment and talent development (e.g. business incubator, a technology showcase and demonstration facility). This phase coincides with phase two of the East Campus redevelopment, which expands the housing, retail and office base developed under phase one.
- Innovation Phase Three (2020 and beyond): focused on completing the innovation hub and maturing innovation activities (e.g. proof of concept center)

Key early implementation activities include attracting core anchors that can help position Saint Elizabeth East as a center for innovation; leveraging and expanding business and entrepreneurial support as well as career pathway programs, particularly those that align with the needs of industry and local businesses and residents; and piloting programs that if successful, can be scaled up. Over time, as institutional partners are recruited and the necessary resources are secured, the innovation marketplace, community empowerment and talent development functions are expected to be fully fleshed out and also evolve to meet changing needs and opportunities associated with the innovation economy.

The innovation focus and presence will complement a broader capacity building effort to strengthen the appropriate business associations, workforce training and education providers, and economic development agencies serving communities near the campus in order to catalyze and sustain economic opportunities for local entrepreneurs and residents over the long term. Program implementation and hub evolution would take place in partnership with local business and civic leaders, leaders of participating educational institutions and representatives from the security, intelligence, defense and other relevant agencies as well as their contractors and supply-chain firms. These partnerships would help advance local reinvestment and economic revitalization, broadly shared economic opportunity and growth. A strong commitment from public and private stakeholders to this major new investment could also convince philanthropic foundations to make their own new and larger generational commitment. Regional collaboration could help facilitate this work and create opportunities broader than a jurisdiction could create on its own.

Priority Strategies

The priority strategies for early implementation are described below, followed by a table outlining a comprehensive set of physical development and program initiatives that would support a fully-fledged Innovation Hub. These priority strategies could initiate within a short term frame and

catalyze the establishment of the full Innovation Hub; several have physical space requirements that can help guide the renovation of buildings and redevelopment on the East Campus, while others are programmatic resources that could begin operations elsewhere in the ward/community (and ideally find a home at the Innovation Hub when resources and appropriate space becomes available).

Component and Priority Strategies

Innovation Marketplace

Promote **Virtual Business Incubation** and Support through a suite of programs that provide access to business incubation services, such as technical assistance, early stage financing and back-office support services. The services would be targeted to start-ups and existing small businesses that are not located within a physical incubator but are seeking to participate more fully in the innovation cluster supply chain. Businesses could receive 8A and HubZone certification support, procurement-targeted programming, 'transaction-ready' assistance, and small-business lending support, drawing upon federally- and locally-funded programs.

Key activity: Link entrepreneurs to existing business start-up and support programs that equip businesses with the skills, tools, resources, and networks to launch and expand. Support and promote programs including those offered through DSLBD (e.g. Kaufman FastTrac), SBA and the SBDC network that focus on business concept feasibility and market-readiness.

Create a **Strategic Partner/Matchmaking Program** that provides an incentive for established corporations, organizations, and/or anchor institutions to team with smaller, innovative and minority-owned firms in pursuit of contract opportunities. Awards of such incentives could emphasize commercialization partnerships (e.g. joint development of new products for export to private sector customers beyond the local and regional economy) as well as the more traditional customer-vendor relationships that have been at the core of the existing federal procurement-driven regional economy. Partnering could be facilitated via a dynamic search instrument that streamlines the matchmaking process.

Key activity: Leverage and strengthen existing initiatives such as DSLBD's Joint Venture Program, which encourages large and small firms to establish new companies in pursuit of contracting opportunities

Provide **Targeted Procurement** Assistance such as workshops where security/intelligence agencies and their prime contractors work with local community organizations and business associations in Wards 7 and 8 to target specific existing businesses in these areas. Workshops will help build a knowledge base and relationships between the agencies, prime contractors and local businesses. Consider an information portal that offers a centralized platform for information on workshops and related activities.

Key activity: Seek to increase the number of local HUBZone-certified businesses and increase federal contract awards to HUBZone businesses through the HUBDC pilot initiative. Also, leverage existing initiatives such as DC's Procurement Technical Assistance Center, which targets contracting with DoD and other federal agencies.

Programmatic -
Community

Programmatic -
Community

Programmatic -
Community

Develop a **Technology Showcase and Demonstration Facility** where companies showcase their products and services while investing in later stage technologies that have initial customers. The Facility would act as a marketplace where the best new innovations are evaluated, reviewed and showcased, facilitating interactions between the public and private sectors, as well as coordination around production solutions. Link demonstration activities in initial phases to innovation anchor tenants and in later phases to the Proof-of-Concept and Testing/Evaluation Centers.

Key activity: Attract innovation anchor tenants to the East Campus that showcase and demonstrate technologies (including through conferences and exhibitions), and can help catalyze a full Innovation Marketplace.

Physical - St Es

Talent Development

Pursue the establishment of a **University** and/or **Educational Consortium** that offers educational programs and supports research aligned with the region's high growth clusters and employment demand. The University's offerings could include undergraduate, graduate and professional programs for traditional and non-traditional students in areas of importance to the homeland security and innovation economy. The initiative would promote strong relationships among regional universities and with the employer and investment communities. The University could also be a 'satellite' location for regional institutions that offer appropriate programs as part of an educational consortium.

Key activity: Attract anchor education tenant(s) to the East Campus whose program is aligned with those of the innovation anchors and targeted sectors of the regional economy. Create partnerships between educational entities and anchor tenants, and promote training and workforce development programming supported by anchor institutions.

Identify career opportunities and design appropriate programs to enhance **Educational Pathways** offerings for K-12 students, especially those aimed at increasing students' understanding of careers in the homeland security and innovation economy. This could include a focus on **Science, Technology, Engineering, and Mathematics (STEM)** programming so that cohorts of students build expertise over time that is well aligned with available opportunities. Consider whether new partnerships with existing DC schools and postsecondary institutions that focus on career and technical education are needed.

Key activity: Launch OSSE's STEM Learning Network that focuses on STEM-infused curricula, internships and activities; leverage the private sector in support of the program, capacity-building and co-investments with the District. Also, expand and enrich citywide career and technical education programs, including adding DCPS cyber security courses and coordinating with private and public partners on shaping curriculum and work-based learning opportunities for students.

Physical - St Es

Programmatic -
Community

Expand/refine existing and launch new (as needed) **Workforce Training** programs in Ward 8 that link adults to careers in the homeland security and innovation economies, including in supporting sectors/occupations. Coordinate with federal agencies, the private sector/contractor supply chain, postsecondary institutions and existing service providers in the design of career pathway programs, and tap into existing efforts and resources. Initiatives could include apprenticeships and on-the-job training, and target entry-level through higher-skill positions such as: management analyst, accountant (bachelor degree); computer support specialist, administrative supervisor, legal secretary, (associate's degree/vocational training); groundskeepers, security, office clerks (on-the-job training). Initially, the focus could be on a few well-defined career pathways for jobs that are readily accessible such as supporting sectors (retail, hospitality, construction).

Key activity: Establish a pilot program through the Ward 8 Budget Challenge that links residents to training such as work-readiness and pre-apprenticeship in order to prepare them for jobs related to construction and green infrastructure development on the East Campus. Also, seek to increase the number of Eligible Training Providers providing IT-related occupational training for low-income District residents.

Programmatic -
Community

Community Economic Empowerment

Offer targeted and coordinated **Entrepreneurship and Workforce Development** support at the Innovation Hub. Offerings should include programming to prepare residents to establish and operate new businesses, workforce/skills development, as well as capacity-building for local service providers. Training would also target the specific needs of female entrepreneurs, existing informal entrepreneurs and local residents. Programming should be coordinated with small business technical assistance to enable a seamless transition of services once individuals establish their formal businesses, as well as with employment training and placement programs.

Key activity: Coordinate with East Campus anchor innovation and education tenants and District agencies in the provision of entrepreneurship and workforce training initiatives. Also leverage pilot training and business development initiatives under the Ward 8 Budget Challenge and Sustainable DC such as those related to green infrastructure development and food incubation.

Promote a **Culinary Incubator** program that supports entrepreneurs and small businesses, trains culinary workers, and provides expanded dining options for residents and employees of St Es federal tenants, contractor firms, and the security, defense and intelligence cluster. Use this as a pilot initiative for eventual full-scale renovation of the existing commercial kitchen on the East Campus into a shared kitchen workspace and incubator that fosters entrepreneurship, offers culinary/business education and provides community space for the promotion of healthy foods.

Key activity: Launch a food incubator pilot project in Ward 8 that promotes entrepreneurship, offering shared commercial kitchen space and technical assistance. The program would also link entrepreneurs to vending and dining opportunities on the East Campus.

Physical - St Es

Physical - St Es

Launch a **Cooperative Businesses Strategy** that enables employee-owned firms to provide goods and services to the security and innovation supply chain and contractor firms, while also creating quality jobs for residents in employee-owned firms that hire and operate locally. As part of the strategy, provide support for the cooperative businesses' workforce training needs, as well as technical assistance and access to financing, aligned to the specific needs of businesses.

Key activity: Investigate cooperatively-owned business models based on local procurement opportunities and the workforce skills of residents in Ward 8 neighborhoods. Leveraging DHCD's Community Challenge Planning grant, conduct assessment and identify the next steps required to establish and begin cooperative business operations.

Programmatic -
Community

Implementation

The Innovation Hub at Saint Elizabeths East is uniquely positioned to catalyze economic growth and address the unmet need in the region for a place where research and innovations can be developed and shared in a 'marketplace' of ideas and products, which can attract further investment and spur an innovation ecosystem and revitalization East of the River. The clustering of research, technology transfer and commercial activities, linked through tailored programs, will help increase entrepreneurial activity, venture capital investment and workforce development, providing a model for public-private and philanthropic partnerships.

The establishment of the Innovation Hub and the successful delivery of its programs will require ongoing planning, partnerships among government, businesses, educational institutions and community organizations, and significant investment over the long term. Certain components may take longer to develop; for example, even under ideal conditions, R & D and commercialization require substantial trial and error before a commercially successful product or business emerges. Similarly, developing the skills of local residents through education and workforce programs takes time, particularly those that are science and technical-related. Certain components may also evolve over time and require refinement in order to meet current needs and opportunities, including specific industries targeted under the broad umbrella of innovation and technology-based economic development. However, the continued calibration of target areas and supportive programs can result in a spectrum of offerings that meet the needs of anchor institutions and tenants, related businesses, and provide opportunities for local residents to engage with the anchor.

Comprehensive Listing of Strategies

Hub Component	Goal	Strategy	Physical or Programmatic*	Phase (One - Three)**
INNOVATION MARKETPLACE	Create an environment that encourages entrepreneurship and small business development in order to leverage federal tenants at St Es and opportunities in the broader innovation economy	Promote Virtual Business Incubation and Support through a suite of programs that provide access to business incubation services, such as early stage financing, technical assistance and back-office support services. The services would be targeted to start-ups and existing small businesses that are not located within a physical incubator but are seeking to participate more fully in the innovation cluster supply chain. Businesses could receive 8A and HubZone certification support, procurement-targeted programming, 'transaction-ready' assistance, and small-business lending support, drawing upon federally- and locally-funded programs.	Programmatic - Community	One - Priority
		Create a Strategic Partner/Matchmaking Program that provides an incentive for established corporations, organizations, and/or anchor institutions to team with smaller, innovative and minority-owned firms in pursuit of contract opportunities. Awards of such incentives could emphasize commercialization partnerships (e.g. joint development of new products for export to private sector customers beyond the local and regional economy) as well as the more traditional customer-vendor relationships that have been at the core of the existing federal procurement-driven regional economy. Partnering could be facilitated via a dynamic search instrument that streamlines the matchmaking process.	Programmatic - Community	One - Priority
		Develop a Mentoring Program that provides access to experienced advice, including an informal network of business and technology mentors, as well as more formal relationships with federal security, intelligence and defense agencies. As part of this, increase the pool of mentors and collaborate with corporations that have existing mentor-protegee programs. Also consider an entrepreneur-in-residence or executive-in-residence initiative that would guide entrepreneurs through business formation and growth issues specific to the industry sub-sector. Firms would receive technical assistance from specialized advisors who are well-matched to each firm's market sector and can assess business strategy, market attractiveness and product readiness.	Programmatic - Community	One

Comprehensive Listing of Strategies (continued)

<i>Hub Component</i>	<i>Goal</i>	<i>Strategy</i>	<i>Physical or Programmatic*</i>	<i>Phase (One - Three)**</i>
		Develop a Business Incubator that offers a range of flexible office and lab space where entrepreneurs and start-ups can access shared support services in order to minimize costs. Initially, the incubator should offer general office space with provision for Wi-Fi and light lab and assembly. Over time, the growth of new businesses may support the offering of several incubators and/or accelerators, possibly with specialized facilities to meet the needs of technology subsectors.	Physical - St Es	Two
		Promote Small Business Technical Assistance , including establishing existing programs at a highly visible and accessible center on the East Campus, where start-ups and existing small businesses can receive help with financial, legal, technical, marketing, and other matters. The Center should offer assistance (both tech-specific and more general) to promote a stronger connection between the innovation economy and its supply-chain and nearby firms that seek to become part of the local economy.	Physical - St Es	One
	<i>Expand resources and improve access to financing for start-ups and small and local businesses</i>	Promote Seed and Business Growth Financing for start-ups and firms in the early stage as well as existing small firms seeking to expand and mature. Financing could include standard equity capital, equipment loans, convertible debt notes, as well as small business growth funds, microlending and linking firms to investors who recognize the commercial potential for a particular product. Establish a centralized function and person for introductions of firms to individual investors, angel networks, venture funds, corporate investment funds, and government sources such as SBIR and In-Q-Tel.	Programmatic - Community	One

Comprehensive Listing of Strategies (continued)

<i>Hub Component</i>	<i>Goal</i>	<i>Strategy</i>	<i>Physical or Programmatic*</i>	<i>Phase (One - Three)**</i>
		Promote Business Associations that encourage local businesses within the innovation sector supply-chain to network. Networking can create stronger business relationships, helping existing firms generate new business, identify cost-savings and also lower barriers to entry for local firms. It can also lead to joint business development strategies such as teaming on bids, pooling procurement in order to secure better pricing, doing business with each other, and investing jointly in shared services and infrastructure for their mutual advantage. This can leverage capacity amongst local businesses, enable more rapid growth, and support a stronger, more highly networked business community.	Programmatic - Community	Two
		Create an Angel Investor Education Program that provides education to less-experienced angel investors in order to better inform decisions about investments in firms and products. These investors may have investment capital to offer and a strong interest in the innovation economy, but have limited understanding of the risks and specialized business opportunities and issues (e.g. promising technologies) they would encounter as investors in high-growth, entrepreneurial technology firms. This program should draw from successful angel investor education programs that exist in other parts of the country.	Programmatic - Community	Two
		Establish an Early-Stage Gap Fund Program , that provides small, flexible and quickly available grants to entrepreneurs and start-ups to enable the early market research, early steps toward product prototyping, and assessment of commercial potential so that the firm or concept to be attractive to angels and early-stage investors. As part of this, identify, leverage and connect entrepreneurs to private funding sources such as foundation programs.	Programmatic - Community	Two

Comprehensive Listing of Strategies (continued)

Hub Component	Goal	Strategy	Physical or Programmatic*	Phase (One - Three)**
	<i>Promote greater access for small businesses of federal contracting opportunities</i>	Provide Targeted Procurement Assistance such as workshops where security/intelligence agencies and their prime contractors work with local community organizations and business associations in Wards 7 and 8 to target specific existing businesses in these areas. Workshops will help build a knowledge base and relationships between the agencies, prime contractors and local businesses. Consider an information portal that offers a centralized platform for information on workshops and related activities.	Programmatic - Community	One-Priority
		Provide Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) Coaching and Training to start-ups and existing small businesses to enable them to understand the SBIR and STTR programs and how to be successful in the application process, especially with DHS- and DOD-related research opportunities. Link coaching to small business technical assistance, mentoring, networking and other support programs.	Programmatic - Community	One
		Promote Business Networking, Information Exchanges and Mentorship through ongoing government-business-investor dialogue. Networking events could include workshops, conferences, social networking, and 'pitch nights' for new entrepreneurial firms with venture capitalists or routine interactions of regional business leaders with federal funding agency staff, investors and tech entrepreneurs/small businesses. Benefits of this will include greater awareness of the quality of local vendors among federal procurement officers and of local early-stage businesses among investors.	Programmatic - Community	One

Comprehensive Listing of Strategies (continued)

Hub Component	Goal	Strategy	Physical or Programmatic*	Phase (One - Three)**
	Develop innovation-focused facilities and programs that foster collaboration with federal government, institutions and private sector around technology transfer and commercialization	Develop a Technology Showcase and Demonstration Facility where companies showcase their products and services while investing in later stage technologies that have initial customers. The Facility would act as a marketplace where the best new innovations are evaluated, reviewed and showcased, facilitating interactions between the public and private sectors, as well as coordination around production solutions. Link demonstration activities in initial phases to innovation anchor tenants and in later phases to the Proof-of-Concept and Testing/Evaluation Centers.	Physical - St Es	Two - Priority
		Create a Defense/Security-related Technology Testing and Evaluation Center on the East Campus that leverages regional competitive advantages such as cybersecurity, software development and advanced IT networks. An advanced concepts lab could conduct complex modeling and simulations, develop software/hardware, allow for collaborative testing and may also serve as/be co-located with a Technology Showcase and Demonstration Facility.	Physical - St Es	Three
		Establish a University led by core institution(s), with the region's universities represented / part of a strategic alliance. Develop specialized research areas tied to the homeland security and innovation economy, for example in cybersecurity and critical infrastructure key resources. In collaboration with the region's innovation-focused universities and organizations, design and develop laboratories to accommodate joint research projects, especially those that would be funded by federal science and technology programs. As part of this, explore the feasibility of a DHS Center of Excellence that aligns with DHS' evolving commercialization needs in partnership with local universities. Consider a center focused on technology transfer and /or business practices and acquisitions.	Physical - St Es	Three

Comprehensive Listing of Strategies (continued)

<i>Hub Component</i>	<i>Goal</i>	<i>Strategy</i>	<i>Physical or Programmatic*</i>	<i>Phase (One - Three)**</i>
		Promote Technology Transfer and Commercialization by offering shared space for representatives from Tech Transfer offices associated with DHS, federal labs, FFRDCs, and colleges/universities in region. Activities would include invention disclosures, patenting, licensing, and marketing activity for concepts with commercial potential that emerge from re-search labs. The presence of security-related federal agencies would facilitate tech transfer scouting and the process for identifying gaps in the supply chain that could be filled by locally-based firms. Pair this with a networking strategy that attracts key players from relevant university centers, FFRDCs and other tech-based laboratories to participate in business development interactions with agencies, small technology businesses, security- and defense-sector firms, and investors.	Programmatic - Community	Three
		Create a Proof-of-Concept and Prototyping Center , where activities could include developing a research technology further to a working prototype, and/or studying markets to see if the business concept will work. The center may be incorporated into or co-located with the incubator and/or the light manufacturing and assembly facilities. Over time, the center will help to improve linkages between the business / investor community and the scientists working in labs; allowing the investors to see technologies being developed and allowing researchers to better understand market demands. This center should be managed so that it is available to federal science, technology and commercialization offices, as well as the technology transfer offices of the region's universities, to encourage new firms formed with federally- or university-led technology to carry out this function locally.	Physical - St Es	Three

Comprehensive Listing of Strategies (continued)

<i>Hub Component</i>	<i>Goal</i>	<i>Strategy</i>	<i>Physical or Programmatic*</i>	<i>Phase (One - Three)**</i>
		Develop space on the East Campus in support of business Product Development and Business Contracting and Networking . Construct larger, less-finished spaces to support prototyping, small-scale assembly, storage and distribution for firms developing products and manufacturing them. Also, develop facilities for the private sector, which include meeting rooms, offices, hotel and conferencing facilities and street-level retail/food establishments that promote networking and information exchange between contractors, federal agency clients and entrepreneurs.	Physical-St Es	Multi-phased
	<i>Support a regional innovation cluster that will improve regional competitiveness</i>	Leverage the designation of Saint Elizabeths as part of the Central Employment Area in order to attract federal tenants as well as private contractors that seek proximity to federal clients. The clustering of key federal anchors and private sector firms in Ward 8 will generate business, procurement and employment growth. This approach can also improve the District's competitive position and help it participate in and contribute more fully to the regional innovation economy, particularly when paired with a regional strategy for development of underutilized metro stations.	Physical - Programmatic	One
		Support the creation of Regional Technology Council for firms in the innovation cluster, its vendors and service-sector supply chain. A Council can support networking and business development activities for firms located in the region in order to improve competitiveness of a regional innovation cluster.	Programmatic - Community	One
		Explore the designation of an Innovation Zone in Ward 8 that continues along the southern Metro Green Line Corridor. Investigate the potential of financial and other incentives that can attract firms interested in locating in the zone and hiring community residents, and also grow start-ups and existing firms in the Ward. Explore a collaborative regional strategy for Metro Green Line Corridor Development that clusters development near underutilized Green Line Metro stations.	Programmatic - Community	Two

Comprehensive Listing of Strategies (continued)

<i>Hub Component</i>	<i>Goal</i>	<i>Strategy</i>	<i>Physical or Programmatic*</i>	<i>Phase (One - Three)**</i>
		Create a Manufacturing Extension Partnership that enables manufacturers to access and use technology to expand businesses. Program is funded by NIST, which is currently working to build stronger programming that connects innovation-driven, technology-focused firms with traditional manufacturers. An alternative to NIST's competitive process is to set up a private-sector organization that can accomplish similar goals without federal involvement.	Programmatic - Community	Three
TALENT DEVELOPMENT	<i>Promote access to postsecondary programs that target the innovation economy</i>	Pursue the establishment of a University and/or Educational Consortium that offers educational programs and supports research aligned with the region's high growth clusters and employment demand. The University's offerings could include undergraduate, graduate and professional programs for traditional and non-traditional students in areas of importance to the homeland security and innovation economy. The initiative would promote strong relationships among regional universities and with the employer and investment communities. The University could also be a 'satellite' location for regional institutions that offer appropriate programs as part of an educational consortium.	Physical - St Es	One - Priority
		Promote community college programs and/or satellite locations in close proximity to St. Elizabeths. This could include expanding the existing Ward 8 presence to a highly visible and accessible site on the East Campus, and offering industry-targeted associate degree and certificate programs. Curriculum should be co-designed by security and intelligence agencies, as well as private-sector firms that are offering jobs with career paths into the homeland security and defense-sector supply chain (e.g. contract acquisitions), so that academic programs and certifications are aligned with available jobs.	Physical - St Es	Two

Comprehensive Listing of Strategies (continued)

<i>Hub Component</i>	<i>Goal</i>	<i>Strategy</i>	<i>Physical or Programmatic*</i>	<i>Phase (One - Three)**</i>
	<i>Strengthen career pathway programs to grow the pipeline of innovation sector talent</i>	Identify career opportunities and design appropriate programs to enhance Educational Pathways for K-12 students, especially those aimed at increasing students' understanding of careers in the homeland security and innovation economy. This could include a focus on STEM programming so that cohorts of students build expertise over time that is well aligned with available opportunities. Consider whether new partnerships with existing DC schools and postsecondary institutions that focus on career and technical education are needed.	Programmatic - Community	One - Priority
		Expand/refine existing and launch new (as needed) Workforce Training programs in Ward 8 that link adults to careers in the homeland security and innovation economies, including in supporting sectors/occupations. Coordinate with federal agencies, the private sector/contractor supply chain, postsecondary institutions and existing service providers in the design of career pathway programs, and tap into existing efforts and resources. Initiatives could include apprenticeships and on-the-job training, and target entry-level through higher-skill positions such as: management analyst, accountant (bachelor degree); computer support specialist, administrative supervisor, legal secretary, (associate's degree/vocational training); groundskeepers, security, office clerks (on-the-job training). Initially, the focus could be on a few well-defined career pathways for jobs that are readily accessible such as supporting sectors (retail, hospitality, construction).	Programmatic - Community	One - Priority
		Develop/expand After-School and Summer Offerings in Ward 8 that build on existing models, including the variety of summer camps and workshops related to homeland security, information technology, robotics, and STEM activities offered in the DC region. Leverage existing training programs already offer to youth interested in IT-related careers. Also support Industry-School Partnerships where the private sector partners/adopts schools and /or provides support for programming in school or during after-school activities support.	Programmatic - Community	One

Comprehensive Listing of Strategies (continued)

Hub Component	Goal	Strategy	Physical or Programmatic*	Phase (One - Three)**
		Maintain strong Internship Programs within DHS and other relevant agencies, with focused outreach to engage students from communities near St. Elizabeths. Internships provide pathways for students and workers to full-time employment, both in terms of skill- and relationship-building and also due to the value of holding a security clearance, which is a requirement for many DHS internships. Examples of DHS student trainee positions include those related to administration, investigation, and IT occupations. Offer career awareness ahead of programs so that interested students can make informed choices about internship opportunities.	Programmatic - Community	One
	Streamline the employment matching process	Create an ' Employment Opportunity Clearinghouse ' through which under- and unemployed, individuals can be matched to job openings. The Clearinghouse could prioritize matching unskilled job-seekers to entry-level employment while they also pursue after-hours training to increase eligibility for higher-level positions. Such a program may require collaboration among training providers and employers willing to commit to hiring those who complete these training programs successfully.	Programmatic - Community	One
		Promote an Integrated Workforce Development and Job Training System with the WIBs, One-Stops, local community colleges, and other training providers that targets employment opportunities in the federal and innovation sectors at sites located along appropriate metro stations in DC, MD and VA. At these sites, also consider teaming a business development specialist that provides procurement outreach to local firms with a workforce development specialist coordinating community workforce programs for local residents.	Programmatic - Community	Two
	Offer initiatives that retain workforce and allow employees to improve skillsets	Expand and strengthen Continuing Education for current DHS, and the region's professional and contractor employees (including those on both professional and nonprofessional career tracks). Programs could leverage research advances that the universities and the region's DHS-funded laboratories are making in DHS-relevant technology areas.	Programmatic - Community	Two

Comprehensive Listing of Strategies (continued)

Hub Component	Goal	Strategy	Physical or Programmatic*	Phase (One - Three)**
		Offer Certificate Programs tailored for employees interested in furthering homeland security, defense technology and information technology careers. In addition to continuing education, employees and potential employees at all levels would be able to acquire various certifications. Offerings would be tailored to the ever-changing needs of government agencies and private sector firms. Strong relationships between education providers and employers are necessary to ensure that skills acquired in certificate programs are useful and that certificates are recognized by employers.	Programmatic - Community	Two
		Expand and/or launch employee Retention Programs in coordination with private-sector, educational and government employers. Emphasis should be placed on serving those who currently reside in the neighborhoods near St. Elizabeths, and programs should include a focus on maintaining a supportive workplace culture and enhancing skillsets.	Programmatic - Community	Three
COMMUNITY EMPOWERMENT	<i>Build workforce and entrepreneurial capacity to ensure local residents and organizations participate in economic opportunities</i>	Offer targeted and coordinated Entrepreneurship and Workforce Development support at the Innovation Hub. Offerings should include programming to prepare residents to establish and operate new businesses, workforce/skills development, as well as capacity-building for local service providers. Training would also target the specific needs of female entrepreneurs, existing informal entrepreneurs and local residents. Programming should be coordinated with small business technical assistance to enable a seamless transition of services once individuals establish their formal businesses, as well as with employment training and placement programs.	Physical - St Es	One - Priority
		Pursue the establishment of an Empowerment Center that offers programs to support entrepreneurial business creation, small business technical assistance and a range of individual/family/community support services designed to complement and augment business support, as well as link to workforce and training programs. The Center could serve as key partner in the Innovation Hub, with input into coordination and management to ensure that programming offered by anchor tenants, private-sector firms, educational institutions and community organizations are mutually supporting.	Physical - St Es	One

Comprehensive Listing of Strategies (continued)

Hub Component	Goal	Strategy	Physical or Programmatic*	Phase (One - Three)**
		Consider Re-Entry Workforce and Entrepreneurship Programs for Ex-Offenders such as technician training. Programs should be offered ahead of release, and require cooperation and coordination with correctional institutions and local community colleges. Ensure that these programs are planned in collaboration with federal agencies as well as private-sector employer firms in the supply chain, and provide incentives for employers to offer jobs to nonviolent ex-offenders. Provide ongoing networking support for ex-offenders and enlist experienced entrepreneurs to offer advice and guidance that can help these new business owners be successful.	Programmatic - Community	Two
	<i>Promote entrepreneurship tied to procurement needs of anchors, institutions and innovation-sector firms</i>	Launch a Cooperative Businesses Strategy that enables employee-owned firms to provide goods and services to the security and innovation supply chain and contractors firms, while also creating quality jobs for residents in employee-owned firms that hire and operate locally. As part of the strategy, provide support for the cooperative businesses' workforce training needs, as well as technical assistance and access to financing, aligned to the specific needs of businesses.	Programmatic - Community	One - Priority
		Promote a Culinary Incubator program that supports entrepreneurs and small businesses, trains culinary workers, and provides expanded dining options for residents and employees of St Es federal tenants, contractor firms, and the security, defense and intelligence cluster. Use this as a pilot initiative for eventual full-scale renovation of the existing commercial kitchen on the East Campus into a shared kitchen workspace and incubator that fosters entrepreneurship, offers culinary/business education and provides community space for the promotion of healthy foods.	Physical - St Es	One - Priority
		Support local access to a critical mass of Community Development Financial Institutions and Programs . These institutions should include community development venture capital funds to serve businesses and other organizations in the communities near St. Elizabeths. Ensure that credit unions, banking and lending institutions offer a suite of services for unbanked and under-banked individuals, families, and businesses.	Programmatic - Community	One

Comprehensive Listing of Strategies (continued)

<i>Hub Component</i>	<i>Goal</i>	<i>Strategy</i>	<i>Physical or Programmatic*</i>	<i>Phase (One - Three)**</i>
		Create a Microfinance Program for community entrepreneurs. Connect the microlending program to other lending programs to create a glide path to growth for microbusinesses; for example to move up the value chain from retail sales toward higher-growth distribution and supply.	Programmatic - Community	One
		Promote Expansion of Local Small Businesses into Markets outside the Region by providing information about tools and strategies. Informational resources could include staff expertise, a web presence and online social networking. Markets outside the region should include overseas customers and networks.	Programmatic - Community	One
	<i>Support economic and neighborhood revitalization</i>	Leverage East Campus development activities in ways that generate economic, community, and environmental benefits for the Ward. Activities could include linking residents to construction employment, apprenticeship and training programs, connecting small business to procurement opportunities, and implementing green and sustainable development practices.	Physical - St Es	One
		Support the Placement of Business School Students from regional universities as interns within investment funds that support urban revitalization projects. Projects could include pension-capitalized funds and those that have made a commitment to responsible investment principles. Ensure that interns are supervised by staff professionals who have direct personal experience working in low-income, economically-distressed communities.	Programmatic - Community	Two
		Develop the hub as integrated part of a Mixed Use Urban Center on the East Campus that includes housing, retail, cultural, office, institutional, hotel, hospitality and other uses. The overall development program should facilitate interactions between the federal, private and non profit /institutional sectors and stakeholders where neighborhood amenities such as libraries, coffee shops and community centers help promote these interactions. Provide high-speed communications throughout the East Campus at low cost to Hub businesses.	Physical - St Es	Multi - phased

* 'Physical' refers to initiative having a physical presence at Saint Elizabeths; 'programmatic' refers to initiative being operated in the ward/community.

** Phase One: 2013-2015; Phase Two: 2016-2020; Phase Three: 2020 and beyond.

References

- Drucker, Peter. (1986). *Innovation and Entrepreneurship*. Harper Business, New York.
- Hartsock 2011. Regional Innovation Clusters. Presented at the State of Upstate New York Conference: Resiliency, Partnerships and Innovation. June 8, 2011
- Markusen, A., Hall, P., Campbell, S., & Deitrick, S. (1991). *The rise of the gunbelt: the military remapping of industrial America*. New York: Oxford University Press.
- Mayer, H., & Zalneraitis, R. (2005). *The homeland security industry and its impact on the Arlington, Virginia, Economy*. Available at:
http://www.stayarlington.com/docs/homeland_security.pdf
- Mistry, Nisha and Joan Bryon. 'The Federal Role in Supporting Urban Manufacturing' Paper published by The Brookings Institution. April 2011.

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